

CA2 ALLM  
1948F33

ALBERTA LEGISLATURE LIBRARY



3 3398 00481 5311

PROVINCE OF ALBERTA

DEPARTMENT OF LANDS AND MINES



**FIFTH**  
**INTERPROVINCIAL COMMITTEE**  
**ON THE**  
**MINING INDUSTRY**

REPORTS OF  
STANDING COMMITTEES  
AND  
OTHER SUBMISSIONS  
1948

JASPER PARK LODGE  
JASPER NATIONAL PARK, ALBERTA  
SEPTEMBER 2 - 4, 1948

HON. N. E. TANNER  
Minister

JOHN HARVIE  
Deputy Minister



Digitized by the Internet Archive  
in 2024 with funding from  
Legislative Assembly of Alberta - Alberta Legislature Library



RESEARCH COUNCIL OF ALBERTA  
87th AVE. X 114th ST.  
EDMONTON, ALBERTA.

Alberta Dept. of Energy Library Services

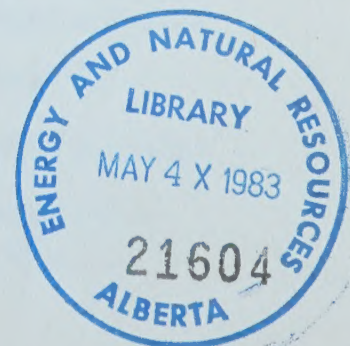


LIBRARY  
Energy and Natural Resources

Province of Alberta  
DEPARTMENT OF LANDS AND MINES

FIFTH  
INTERPROVINCIAL COMMITTEE  
ON THE  
MINING INDUSTRY

Reports of  
Standing Committees  
and  
Other Submissions  
1948



LIBRARY  
Energy and Natural Resources

Province of Alberta

DEPARTMENT OF LANDS AND MINES

Digitized by the Internet Archive  
in 2024 with funding from

Legislative Assembly of Alberta - Alberta Legislature Library



[https://archive.org/details/ableg\\_33398004815311](https://archive.org/details/ableg_33398004815311)



## INDEX

### Reports of Standing Committees:

Operating regulations in mines -- G. E. Cole

Mining townsites -- A. E. K. Bunnell

Publicity -- L. E. Tremblay

Photogrammetry and topographic mapping including  
airborne magnetometer -- W. B. Timm

Education -- A. E. Cameron, Chairman, C.I.M.M. Committee  
on Education for the Mineral Industry

Research -- C.I.M.M. Committee on Research for the  
Mineral Industry

Work of Committee on Geological Research -  
Geology Division, C.I.M.M. -- J. E. Hawley

Suggestions for a Research Program for the  
Canadian Coal Industry with Brief Resume of  
the Work of the Research Council of Alberta  
on Coal -- W. A. Lang

Conservation of Mineral Resources -- A. E. Cameron,  
Chairman, E.I.C. Committee on Conservation  
of Mineral Resources

### Other Submissions

Western Quebec Mining Association -- Eugene Larochelle,  
Secretary

Topics to be discussed by Mr. P. Streeter at Plenary  
Session on Coal

Submission of The Western Canada Bituminous Coal  
Operators' Association -- W. C. Whittaker

The Greatness of Coal -- V. A. Cooney, B.A., LL.B.  
Executive Secretary and Treasurer, Domestic  
Coal Operators' Association of Western Canada.

Brief on the Coal Industry -- John Crawford

Western Canada Petroleum Association -- John Galloway

Oil and Gas Industry - Province of New Brunswick --  
C. T. R. Wilson, N.B. Oilfields, Ltd.







REPORT ON OPERATING REGULATIONS FOR METAL MINES

BY

GEORGE E. COLE, CHAIRMAN OF COMMITTEE

TO MINES' MINISTERS' CONFERENCE  
JASPER, ALBERTA.

At the Mines' Ministers' Conference held at Keltic Lodge, N.S., in September 1947, the draft of the regulations for metal mines as prepared by Geo. E. Cole, was formally presented to the Ministers and the Committee set up to discuss the regulations. Copies of the draft had previously been sent out to all parties interested. The draft as submitted included an assembly of the regulations from the various provincial mining acts.

In presenting the draft to the Conference attention was directed to the fact that in its preparation a marked similarity in principle was found in all the acts for the regulation of the operations in metal mines throughout Canada and that very few acts included regulations that were not contained in all.

The draft regulations were broken down so as to be read more easily. An endeavor was made to include in each section only the matter concerned in one phase of operation.

Finally a sequence was followed carrying the regulations from preliminaries at the surface, to the shaft, to the lateral workings and stopes, and back to ore treatment at the surface whether in mill, smelter or refinery. The sequence in the existing acts is not uniform.

There is also a variance in the language and construction in many sections of the acts. The draft regulations were taken from those sections of the existing acts considered to be the simplest and best in form and construction. Further an attempt was made to reduce the wording where possible and to make it uniform throughout.







At this point it is advisable to mention that no attempt was made to include anything but general electrical regulations in the draft. Such as are required in hoisting by electric power, in trolley locomotives, use in magazines for storage of explosives, and electric currents in blasting operations. While regulations for use in electrical power in hoisting and perhaps trolley locomotives might find a better place in a part devoted particularly to electrical operations, they are left in the draft for the present.

The draft regulations submitted to the Conference also included a number of recommendations and suggestions offered in Bulletin No. 138, Ontario Department of Mines ( Report of a Committee appointed to inquire into a Hoisting accident at the Paymaster mine).

In that inquiry it was found that two major factors caused the accident -

Rope Corrosion - primary - p.4

Failure of Safety Dogs - secondary - p.9,

but many other matters were considered. From these latter, two suggestions were written into the draft regulations:

1. Limiting the layers of rope permissible on the drum to two. See p.10.

"The Committee noted with satisfaction a definite trend amongst mine operators towards employing large drums with no more than two layers since with over three layers bad winding characteristics and rope wear are invariably produced. The ideal in British and South African practice is not to exceed two layers and if possible to use no more than one layer."

2. Size of drums and sheaves in relation to rope diameter - pp.11, 12, 13:

"The Committee is of the opinion that strong efforts should be made to attain a ratio of at least 80 to 100 in future installations and modifications of







existing ones. Not only would it keep the bending stresses moderate but would also obviate the objectionable piling up of many layers of rope on the drum." p.11.

"Experimental investigation has shown that, other things being equal, the larger the diameter of a head sheave, the greater the endurance of the hoisting rope." p.12.

There was also an opinion expressed that in some cases a ratio of 60 to 1 was too small. - p.11.

Accordingly 80 to 1 for drums and 100 to 1 for sheaves was written into the draft but not with any intention of either being final - it was really done to stimulate discussion. One criticism was soon voiced - the drum and sheave might well be of the same diameter.

However it is in the factor of safety for hoisting ropes that there is a divergence of opinion, such as to make it difficult to say which one of two should be used in preparing the draft. British Columbia has one opinion: Ontario has another. It is hoped that further discussion will lead to some directive as to what course should be taken.

There was also written into the draft regulations certain provisions for blasting certificates and certificates for hoistmen. British Columbia has for several years been using a certificate for blasters, while Manitoba has been using the certificate for hoistmen. In both cases the provinces have found the certificates to be beneficial. Other provinces have not adopted such certificates but their inclusion in draft regulations should not be contentious. Since mechanical engineers are now taking a useful place on the staff of Mines departments the adoption of a hoistman's certificate might easily become general as greater supervision of hoists and hoistmen is being required.





Investigation of the Paymaster accident was responsible for the addition of many new provisions to the Mining Act of Ontario and since many revisions of the former act were under way much has come to light since the draft regulations were presented to the Committee at Keltic Lodge, N.S. The proposed new act was received too late for incorporating the additions and revisions in the draft regulations of 1947. However the Ontario Act of 1948 has now been related to the draft regulations which were submitted to the Mines' Ministers' Conference. In a redraft these additions can readily be added to the former draft.

At the Keltic Lodge meeting attention was drawn to what appeared to be an omission from the draft. In reply it was stated that time had not permitted the inclusion of these matters in the draft. These omissions included the following: powers of inspector, employment of boys, notices to the Minister re opening, abandoning and re-opening a mine, notification of accidents, inquests, and regulations regarding the use of intoxicating liquor in or about mines.

In the matter of inquests after mine accidents, no detailed procedure can be formulated from the existing acts. In preparing regulations for a draft only the simplest procedure should be included in order that the requirement for an inquest may not be overlooked.

It will be of interest to this Committee to learn that the draft regulations submitted as tentative have already been accepted for the most part by the British Columbia Department of Mines and written into a new metal mines regulation act adopted at the 1948 session of the Legislature.

These regulations have now been related to the existing draft regulations. The British Columbia Mines Regulations Act will now be of assistance in adding to a redraft more specific regulations regarding air and ventilation. The amendments included in British Columbia's 1948 act to cover the occurrence of methane in metal mines came as a result of an accident in the Bridge River area.





As matters now stand in the work of this Committee, it would appear that considerable progress has been made in reaching uniform regulations throughout Canada - though that progress may not have been exactly as originally intended. It should be a source of satisfaction to know that in intent and spirit there is the desire for uniformity - which in the final analysis means that all are concerned that there shall be no accidents. Another draft of regulations need not be accepted as the last word in protection against accidents but it will be at least an assembly of everything presently included in the mining acts of Canada - as well as much from other countries.

No matter how regulations are written now, they should be reviewed periodically and concerted action of the Canadian provinces is desirable in altering or adding regulations. It has been noted, however, that many regulations now in the acts are those of long-standing and in them there has been little or no change over the years. On the other hand this Committee may rest fairly well satisfied that while additions may be necessary few deletions in existing regulations will be found advisable.

It does not appear that regulations governing the operation of metal mines can be written in with those for coal mines. Yet there is no doubt that many regulations used at coal mines would be advantageous in metal mines and vice versa. In the matter of the electrical code for coal mines more exacting regulations are necessary but with the existence of methane gas in some of our metal mines consideration will have to be given to the use of special electrical apparatus in zones of hazard.

To-day in mining the two greatest hazards, judged by their severity, that face the industry are hoisting accidents and fire underground. These hazards have increased with depth, speed and heavy tonnage in hoisting, together with.





change in atmospheric conditions which have called for greater precautions in ventilation. While not recurrent, like falls of ground, they disturb operating conditions and affect the morale of personnel. The hoisting regulations have been very carefully studied by the Ontario Department of Mines whose Act of 1948 may be considered the most recent for the guidance of large operations at depth. While much direct action can be taken to guard against fire the hidden risks in hoisting continue in spite of careful scrutiny. At the same time it is desirable that mining acts in Canada should include more specific regulations for prevention of fires. Advantage can be taken of recent studies made both in Canada and the U.S.A. in devising better regulations for fire prevention and improvement of ventilation.

It is proposed to present a number of questions for discussion at the forthcoming Jasper Conference and answers to these should educe information useful in the preparation of a new draft, if such is deemed advisable. This draft can then be undertaken without delay. With discussion at the Jasper Conference the Committee will be in a position to suggest new directives to consummate the completion of another draft act.

All of which is respectfully submitted,

Geo. E. Cole  
Committee on Operating  
Regulations for Metal Mines.

Winnipeg, Manitoba,

August 16, 1948,

GEC:C





Ontario  
Department of  
Planning and Development

14th August 1948.

The Hon. N. E. Tanner,  
Chairman,  
Interprovincial Committee on the  
Mining Industry,  
Jasper Park Lodge,  
Jasper National Park, Alberta.

Dear Sir,

I have the honour to present herewith a Report from the Continuing Committee on Mining Townsites, appointed at the 1946 Conference in Winnipeg.

An interim Report of the Committee was presented at the 1947 Conference at Keltic Lodge, Cape Breton National Park, Nova Scotia and is recorded in the official proceedings of that Conference as Appendix IV.

This Report dealt with the legislation and regulations in each jurisdiction with respect to the location and extent of mining townsites, their administration, and the basis for financing both capital improvements and current expenditures including education and housing therein.

Following the tabling of the Report, the Committee, as recorded on page 10 of the proceedings was given carte blanche as to what to do and study. Subsequently at the request of the co-ordinator new nominations were made to the continuing committee by the respective Deputy Ministers and Mr. R.A. Gibson on behalf of the North West Territories and the Yukon as per attached list. It will be noted that these were mostly the same people who served on the 1947 Committee.

More recently and in line with suggestions made at an informal meeting held to discuss mining townsites at Keltic Lodge and suggested points for consideration for the 1948 meeting appearing in the proposed agenda for that meeting, a letter and two statements were sent out by the co-ordinator as per copies appended hereto. The letter and Statements 1 and 2 were sent to all Government representatives and the letter and Statement 2 to all Mine Operators' Representatives.





The Hon. N. E. Tanner

2.

14th August 1948

Included in the latter statement was a memorandum in regard to the establishment, administration etc. of Snowlake Townsite, Manitoba which will be included in this Report.

Unfortunately the replies received to date are not sufficiently comprehensive to be summarized and my recommendation accordingly is that the opinions in regard to the questions asked in Statement No. 2 should come from the Conference itself.

Yours sincerely,

A.E.K. Bunnell,  
Co-ordinator.





INTER-PROVINCIAL COMMITTEE ON THE MINING INDUSTRY  
CONTINUING COMMITTEE ON MINING TOWNSITES  
as nominated by Deputy Ministers for the 1948  
Conference

---

GOVERNMENT APPOINTEE

MINE OPERATORS'  
REPRESENTATIVE

Nova Scotia	no nomination	no nomination
New Brunswick	C.S. Clements Provincial Inspector of Mines Fredericton, N.B.	Percival Streeter 147 Prince William Street, St. John, N.B.
Quebec	L.A. St.-Pierre Chief of Civil Engineering Projects Branch Department of Mines Quebec City, P.Q.	J.P. Millenbach Manager Canadian Malartic Gold Mines Ltd. Malartic, P.Q.
	- alternate -	- alternate -
	Burroughs Pelletier Director Town Planning Branch Department of Municipal Affairs Quebec City, P.Q.	Eugene Larochelle Secretary Western Quebec Mining Association Room 5116 Chateau Frontenac Quebec City, P.Q.
Ontario	A.R. Crozier Mine Assessor Department of Mines Parliament Buildings Toronto, Ontario	E.L. Longmore General Manager Hollinger Consolidated Gold Mine Ltd. Timmins, Ontario.
Manitoba	J.P. McLeod Supervisor of Local Government Districts Department of the Municipal Commissioner Room 347 Legislative Bldg. Winnipeg, Manitoba	F.D. Shepherd Secretary, Mid-West Metal Mining Assn. 306 Great West Permanent Bldg. Winnipeg, Manitoba



GOVERNMENT APPOINTEEMINE OPERATORS'  
REPRESENTATIVE

Saskatchewan	A.I. Bereskin Department of Natural Resources and Industrial Development Natural Resources Bldg. Regina, Saskatchewan	W.A. Green General Manager Hudson Bay Mining & Smelting Co. Flin Flon, via Winnipeg, Man.
Alberta	J. Harvie Deputy Minister Department of Lands & Mines Edmonton, Alberta	no nomination
British Columbia	James Strang Chief Inspector of Mines Victoria, British Columbia	James A. Pike Manager Island Mountain Mines Ltd. Wells, B.C.
North West Territories	Fred Fraser District Administrator Fort Smith, N.W.T.	J.G. McNiven Mine Manager Negus Mines Yellowknife N.W.T.
Yukon	J.E. Gibbon Acting Controller Dawson, Y.T.	R.F. Diment Diesel Engineer Dawson, Y.T.

27th July 1948





Ontario

Department of  
Planning and Development

INTER-PROVINCIAL MINES' MINISTERS' CONFERENCE ON THE MINING INDUSTRY

MEMORANDUM TO MEMBERS OF THE CONTINUING COMMITTEE ON MINING TOWNSITES

To all Government Appointees and  
Mine Operators Representatives  
as per list attached.

Attached for your information are copies of the following,  
relative to the Committee's Report as submitted to the 1947 Conference  
at Keltic Lodge, Nova Scotia:

- A. The co-ordinator's letter of transmittal of the 30th  
August 1947 to the Conference.
- B. Parts 2 and 3 of the co-ordinator's Report.
- C. A Statement of the action taken in respect thereto.
- D. A memorandum of an informal meeting on mining townsites.

Based on all of the above and growing out of suggestions  
which have been made by the Committee in charge of the 1948 Conference  
it is requested:

- 1. That the Government Appointees enable the co-ordinator  
to supplement the summary of the legislation and  
regulations respecting mining townsites contained in  
the 1947 Report by sending him answers to the  
questions set out in Statement 1 attached hereto.
- 2. That both the Government Appointees and the Mine Operators  
Representatives furnish the co-ordinator their  
personal opinions as to what policy should be adopted  
with respect to the questions asked in Statement 2.

The answers to both statements should be in the co-ordinator's  
hands not later than 10th August next so that they can be summarized and  
put into shape as a memorandum for presentation at the coming conference  
in Jasper on 2nd - 4th September next.

P.T.O.





With regard to the opinions expressed in answers to the questions of Statement 2 these will be summarized but in no case will any individual member of the Committee be linked with the opinion.

I trust that I may have from you all the same prompt and cordial response as was received from the Government Appointees last year so that the Report to this year's Conference will be of real benefit to both the Government and the Industry.

It will be very helpful if a goodly number of the Committee can attend and take part in the Conference and your advices as to whether or not you will be there will be appreciated.

A. E. K. Bunnell,  
Co-ordinator.

27th July 1948.



STATEMENT 1

INTER-PROVINCIAL MINES MINISTERS' CONFERENCE ON THE MINING  
INDUSTRY  
CONTINUING COMMITTEE TO STUDY MINING TOWNSITES

For the attention of Government  
Appointees

1. Acquisition of mineral lands

From the 1947 questionnaire you will note that no answers were received from Nova Scotia, Alberta or the Yukon. The answers from the other jurisdictions dealt almost entirely with mining lands as distinct from lands acquired or concessions granted for the extraction of petroleum and natural gases. It is accordingly requested that you furnish me with as complete a statement as you can as to the basis of the acquisition of lands for each of the three purposes.

In developing your answers you will probably find it helpful to refer to the 1947 questionnaire and the answers thereto. While it is recognized that mining rights are usually granted on lands acquired or leased from the crown there will be instances, particularly in regard to the extraction of petroleum and gas where such rights are acquired from private owners. In this latter instance it is recognized that there will be no uniformity to this basis of acquisition and no attempt should be made to deal with this phase of the matter in this questionnaire except of course to the extent that government may acquire some additional payment.

2. Roads in Mining Townsites and connecting  
roads to Mining Townsites

It is requested that you advise as to whom is responsible for the construction and apportionment of the cost of construction and the cost of maintenance of connecting roads between:

- A. Mining Townsites and main provincial highways
- B. Mining Townsites and mining properties

With regard to B. there will be two cases, one where the mine is situated within the townsite area and two, where the mine is beyond the townsite area.





3. Real Property Taxes

It is requested that you advise as to the basis of assessment and taxation imposed on the real property of mining companies i.e. on lands, buildings and equipment by the province or by the municipality (if any) in which such real property lies.

Note It is not expected that if a mine is within an organized municipality that there will be dual assessment and taxation by both the municipality and the province.

A.E.K. Bunnell  
Co-ordinator.

Department of Planning and Development,  
Parliament Buildings, Queen's Park,  
Toronto, Ontario.

27th July 1948





## STATEMENT 2

### INTER-PROVINCIAL MINES MINISTERS' CONFERENCE ON THE MINING INDUSTRY CONTINUING COMMITTEE TO STUDY MINING TOWNSITES

For the attention of both Government  
Appointees and Mine Operators'  
Representatives.

---

Growing out of the Co-ordinator's Report of August 1947  
your opinion is sought with respect to the following:

1. Acquisition of mineral lands

A. Where such lands are acquired from the Crown  
is it preferable that acquisition be by purchase or by lease?

B. To the extent that mineral rights are acquired  
from the Crown should such rights include the surface rights?

Note At the informal meeting of the Committee  
held at Keltic Lodge those present were of the opinion that in  
all jurisdictions there should be a severance of the mineral  
rights and vice versa.

2. Location of Mining Townsites

Should the location of mining townsites for  
individual mines or for groups of mines be under government  
supervision?

3. Subdivision and uses of land

A. A site for a townsite having been chosen should  
the layout, use and subsequent disposal of the land be under  
government supervision?

B. What steps might be taken to curb speculation  
of vacant land?

4. Financing Mining Townsites

To what extent should a mining company be asked to  
contribute to municipal taxation in which its property is  
situated for:

- A. cost of administration
- B. cost of maintenance
- C. capital improvements



5. Government of Mining Townsites

The form of municipal government best suited for mining townsites;

- A. where there is but one mine within the area
- B. where there are two or several mines within the area.

6. Housing in Mining Townsites

A. The circumstances, if any, under which mining companies might be asked to assume responsibility for the housing of their employees.

B. The extent to which government might be warranted in setting up standards for housing, water supply, sanitation, schools, hospitals, etc.

A.E.K. Bunnell  
Co-ordinator.

Department of Planning and Development,  
Parliament Buildings, Queen's Park,  
Toronto, Ontario.  
27th July 1948

By the courtesy of Mr. D. M. Stephens, Deputy Minister of the Department of Mines and Natural Resources, Winnipeg, Manitoba, it is possible to attach a memorandum in regard to the establishment, administration etc. of Snow Lake Townsite which it is believed you will find of some interest.





## SNOW LAKE TOWNSITE

Townsite located 30 miles North-west of Wekusko on Hudson Bay Railway (Mile 82)

Gravel road (40 miles) constructed jointly by Federal and Provincial Governments.

Subdivision of Townsite made by Government 1946.

Initial subdivision    174 residential lots  
                             20 business lots  
                             7 special lots as follows:    School,  
   hospital, recreational centre, 2  
   Departmental lots and 2 Company lots  
   (dormitory and staff house)

It is intended to subdivide an additional 100 residential lots next year 1948.

Townsite to serve employees of Howe Sound Exploration Company which Company is developing a gold mine adjoining the Townsite.

Mill capacity	2,000 tons per day
No. employees	350 (estimated)
Population	1,500 (estimated)
Mine to commence production towards close of 1948.	

### Administration

The Townsite together with approximately 400 square miles adjoining the same set up as a Local Government District under the "Local Government Districts Act".

Administrator responsible to the Municipal Commissioner has somewhat the same powers as a Municipal Council.

Reference Board of four members appointed to assist or advise the Administrator mainly on points of policy.

Lots purchased by Administrator from Government at a price of \$15.00 per lot. Lots being sold by Administrator at following prices:

Residential	-	\$ 5.00 per foot
Business	-	50.00 " "
Industrial	-	25.00 " "

Mining Company by agreement received 49 lots at a nominal price of \$30.00 per lot to erect dormitory, staff house and dwellings for members of the mine staff.



Sale of lots restricted to mine employees and persons authorized to do business within the Townsite until such time as a surplus of lots is made available.

### Development

The Administrator, Government and Mining Company entered into a tripartite agreement. This agreement among other features provides for the following:

The Company to advance \$325,000.00 in the form of work and material to develop the Townsite as follows:

\$175,000.00 for - Clearing and grubbing; street improvement and construction; sewer and water services (Mains on street); electric power distribution system including transformers.

\$150,000.00 for - Buildings, school, hospital and recreational centre.

The Company will also carry out additional work paid for by the Administrator from the profit derived from the sale of lots (\$90,000). This work to be carried out as and when instructed by the Administrator, who must first obtain the approval of the Municipal Commissioner as to how such monies are to be spent.

All work done in the Townsite to conform to a definite development plan and the approval of the Administrator obtained before any work commenced.

### Maintenance, operation and administration

Under the same agreement the Company is to perform the following maintenance works at its own expense:

Maintain streets and boulevards.  
Operate sewer and water services, including treatment plant.  
Supply water from Company's reservoirs (water obtained from Snow Lake).  
Maintain electric power distribution system.  
Collect and dispose of garbage.  
Provide, maintain and despatch fire fighting apparatus.

The Company also supplies electric power at a rate approved by the Municipal and Public Utility Board.

The Company is responsible for operation and maintenance of the hospital and community centre.





The Company contributes \$6,000.00 annually to the District over and above the program of works outlined above, and in lieu thereof the mining plant of the Company is free from municipal taxation.

The Administrator is responsible for school, police protection, social services, Municipal Commissioner's levy and administration costs. The cost of this is defrayed by a tax levy within the Townsite including all Company houses and the dormitory.

All building within the townsite this year has been carried out by the Company, and consists of 40 Company houses, staff house, hospital and school.

A public notice was published listing the various business enterprises to be opened up and calling for applications. Awards are now being made and it is the opinion of those directly concerned with the townsite that a large building program will be launched next year by private enterprise.

Winnipeg, Manitoba,  
September 26th, 1947.



## REPORT OF THE COMMITTEE ON MINING TOWNSITES

Mr. A. E. K. Bunnell reported that following instructions from the Winnipeg conference, a committee composed of the mining industry and representatives of the provincial governments and the Northwest Territories administration had been organized and required official appointment by the conference. A report and questionnaire (Appendix IV) had been circulated among the various parties concerned in the problem and an appreciable amount of factual information had been obtained from that questionnaire. Interpretation of these facts with a view to the co-ordination of legislation respecting subdivision and uses of land, townsite finance, and jurisdictional control within the townsite appeared to be necessary.

Mr. Bunnell reported that results of the work to date indicated that a continuing committee on this subject was necessary and that that committee should have terms of reference given it.

On Motion by Messrs. Casey and Rickaby, the establishment of a continuing committee on mining townsites composed of the members named in Mr. Bunnell's report was approved by the conference.

On the suggestion of the chairman, the conference gave the committee carte blanche as to what to do and study. No particular duties were assigned other than to inquire into all matters of importance to townsite development.





MEMORANDUM RE THE COMMITTEE ON  
MINING TOWN SITES

---

Mr. Bunnell convened an informal meeting at 10.00  
A.M. on Friday, September 5th, which was attended by,-

Messrs. Harrington and Marshall - Nova Scotia;

" Comtois; Dufresne, Perry  
and Larochelle - Quebec;

Mr. Hogg - Saskatchewan

" Clements - New Brunswick

" Stephens - Manitoba

1. The report of the co-ordinator was reviewed and  
he was asked to supplement the same by adding thereto questions and  
answers with respect to,-

- (a) connecting roads between mining town  
sites and main Provincial highways,-  
the responsibility for the construction  
and an apportionment of the cost of  
construction and the cost of maintenance.
- (b) connecting roads between the central town  
site and the mining properties,- the re-  
sponsibility for the construction and an  
apportionment of the cost of construction  
and the cost of maintenance.



There will be two cases, one where the mines are situated within the town site area and the other where the mines are beyond the town site area, that is in areas without municipal organization.

- (c) Taxes imposed upon mining companies by the Province and by the municipality (if any) in which its property lies.

NOTE:- In some provinces producing mines exist in areas without municipal organization.

- (d) Municipal Revenue,- contributions made by the province to the municipalities towards the capital cost and maintenance of schools, roads, health, welfare, or any other municipal service.

2. Those present were unanimously of the opinion that in all jurisdictions there should be a severance of the mineral rights from the surface rights and vice versa.

3. That in the interval between now and the next conference the co-ordinator should obtain the compositive views of the committee with respect to the legislation and regulations in their judgment should apply in all jurisdictions with respect to the matters referred to in the co-ordinator questionnaire.





4. Mr. Stephens outlined the principle provisions of the agreement which the Province of Manitoba is now negotiating with the Howe Sound Exploration Company for the establishment and maintenance of the Snow Lake Town Site in which provision is to be made for the estimated population of some 1500 people. Mr. Stephens stated that negotiations should be completed in about six weeks time when he would be glad to make the full text of the agreement available to the Committee.

(Signed) A. E. K. Bunnell

CO-ORDINATOR.

Keltic Lodge,  
Ingonish, N. S.,  
September 5, 1947



## REPORT OF THE CO-ORDINATOR OF THE PUBLICITY COMMITTEE

Among the findings of the Fourth Conference of the Provincial Ministers of Mines of Canada was included a statement with particular reference to publicity. It read:

"The Conference recognized the need of increased  
"knowledge on the part of the people of the Dominion  
"regarding the part the mineral industry plays in  
"the economy, and appointed a committee composed  
"of representatives of the mineral industry and of  
"provincial governments in each province to study  
"the whole field of public information, and that  
"Mr. Maurice Tremblay be named as co-ordinator.

Shortly after the conference at Keltic Lodge, an Ontario committee composed of the undersigned and representatives of the Ontario Mining Association and the Canadian Metal Mining Association met in Toronto for the purpose of outlining a working plan in keeping with the recommendations of the Conference. Several meetings have been held since, and the following observations represent the final opinion of the committee:

FINANCIAL HELP TO PROVINCIAL GOVERNMENTS FOR MINING PUBLICITY: This is not a practical method of co-operation and the mining industry is reluctant to participate in any joint effort with the Provincial Government.

PHOTOGRAPHS AND MOTION PICTURES: Every effort should be made by the industry and the Department of Mines to assemble a photo and film library bearing on mining, and revised lists of subjects should be made available to the mining associations and the Department of Mines.



EXHIBITIONS: The mining industry, and through its efforts, the supplying companies, should co-operate with the Department of Mines with regard to annual exhibitions, i.e. the Canadian National Exhibition, in Toronto, and the Central Canada Exhibition, in Ottawa. Co-operation along these lines is an accomplished fact for this year's Canadian National Exhibition.

RADIO PROGRAMS: Encouragement of radio systems and stations to use mining stories by making the necessary effort to indicate potential material to them. This can best be done by the Mining Associations through their Public Relations counsel, and by the publicity branch of the Department of Mines.

NEWSPAPERS AND MAGAZINES: As above. Distribution of news releases and indication to editors and free-lance writers of acceptable mining material, as well as distribution to these media of newsworthy picture layouts.

EDUCATIONAL PAMPHLETS, LITERATURE, ETC: A more general distribution of colourful folders and booklets depicting mining in all its branches should be pursued by both the Department of Mines and the mining industry. These should be written in such a style and language as to be acceptable to school children. Such material should be made available to all school children of the province.

Correspondence with the heads of the Provincial Mines Departments indicates that Ontario was the only province to organize a sub-committee on publicity as per the recommendations of the Fourth Conference.

Respectfully submitted.

Toronto, Ontario.  
July 14, 1948.

Maurice Tremblay,  
Co-ordinator.





R E P O R T      O N

TOPOGRAPHICAL MAPPING AND AIR PHOTOGRAPHY

FOR

INTER-PROVINCIAL MINES MINISTERS' CONFERENCE

JASPER, SEPTEMBER 2 to 4, 1948

=====

W. B. Timm



AERIAL PHOTOGRAPHY AND TOPOGRAPHICAL MAPPING

This report covers the topographical mapping and air photography by the Federal Government.

The information given in attached documents listed below is divided into the periods (1) to the end of the calendar year 1945, and (2) the calendar years 1946 and 1947. This division marks the time when the need of air photographs and topographical maps, as essential to the development of the natural resources, was fully realized and a greatly enlarged program was approved.

The information is attached under the following headings in the order given:

1. Air Photography--

- (a) Area in Square Miles Photographed by R.C.A.F.
- (b) Air Photography by Provincial Governments.
- (c) Summary of Air Photographic Program 1948.

2. Topographical Mapping -

- (a) In Square Miles by Provinces.
- (b) Summary of Mapping Program 1948.





AIR PHOTOGRAPHY IN CANADA  
AREA IN SQUARE MILES PHOTOGRAPHED BY R.C.A.F.  
AS AT DECEMBER 31, 1945.

<u>Province</u>	<u>Vertical</u>	<u>Oblique</u>	<u>Trimetrogon</u>	<u>Total</u>
Nova Scotia	21,428	-	-	21,428
New Brunswick	27,985	-	-	27,985
Prince Edward Island	2,184	-	-	2,184
Quebec	84,380	45,100	-	129,480
Ontario	71,952	130,450	5,350	207,752
Manitoba	17,365	103,150	3,800	124,315
Saskatchewan	53,662	99,350	12,000	165,012
Alberta	88,040	26,815	2,800	117,655
British Columbia	55,111	-	6,200	61,311
Northwest Territories	58,540	159,900	18,500	236,940
Yukon	-	-	19,000	19,000
TOTALS -	<u>480,647</u>	<u>564,765</u>	<u>67,650</u>	<u>1,113,062</u>

JANUARY 1, 1946 - DECEMBER 31, 1947

<u>Province</u>	<u>Vertical</u>	<u>Oblique</u>	<u>Trimetrogon</u>	<u>Total</u>
Nova Scotia	-	-	-	-
New Brunswick	-	-	-	-
Prince Edward Island	-	-	-	-
Quebec	26,669	-	24,750	51,419
Ontario	13,168	-	216,400	229,568
Manitoba	57,041	-	104,450	161,491
Saskatchewan	72,840	-	8,900	81,740
Alberta	48,198	-	750	48,948
British Columbia	43,409	-	2,400	45,809
Northwest Territories	48,303	-	47,500	95,803
Yukon	10,103	-	-	10,103
TOTALS	<u>319,731</u>	<u>-</u>	<u>405,150</u>	<u>724,881</u>
GRAND TOTAL	-----			<u>1,837,943</u>



## GEOPHYSICAL PROSPECTING IN CANADA

Five methods of geophysical prospecting are used in Canada. These include Seismic, Gravimetric, Magnetic, Electrical and Radio Active. The first two methods are used primarily in prospecting for oil structures in the Western Plains region. The next two are used chiefly in the mineral industry in the Precambrian areas of Canada, while the last is used universally.

### Seismic Methods

Seismic surveys in Canada are made primarily by the major oil companies who own their own equipment. These include Imperial Oil, Dominion Gulf Company, Texaco and Standard. Equipment is often developed in the research laboratories of the individual companies and the technical details of the equipment are usually closely guarded secrets.

Both refraction and reflection methods are used, with the latter being much more preponderant. Surveys for oil by Seismic methods have covered much of the Western Plains area from the United States boundary to the Norman Wells area in the Arctic.

Small, portable seismographs have been used with considerable success in the determination of the depth of overburden at such localities as Cornwall, Ontario, and the Beatty Mine in Northern Quebec.

Research into earth structure using Seismic methods is at present being undertaken by the Dominion Observatory in collaboration with the Associate Committee on Geodesy and Geophysics of the National Research Council. Rock blasts from the mines at Kirkland Lake are used as a source of energy and it is hoped that some insight into the nature structural features of the earth will be gained from the studies.

### Gravimetric Methods

As in the case of Seismic surveys, most of the Gravimetric work in Canada, as far as prospecting is concerned, is done by the major oil companies. Several types of instruments are used, including the Humble, Gulf and Atlas. These instruments are usually mounted in an automobile for surveys in settled parts of the country, but are portable enough to be carried by pack-train or aircraft where the use of an automobile is not practical. A considerable portion of the Western Plains area has been covered by Gravimetric surveys in search for oil structures.

In addition to the work of oil companies, the Dominion Observatory, in collaboration with the Geological Survey of Canada, has made a network of gravimetric traverses from the Atlantic Coast to the foothills of the Rocky Mountains. This method has been used by the Dominion Observatory in the Maritime Provinces to locate buried granite ridges.

Last year, experiments were made by the Dominion Observatory using the Atlas gravimeter in outlining the sulphide orebody at East Sullivan, Quebec. Further experimental work along this line is being conducted this year in the Sudbury area.



## Magnetic Methods

The magnetometer has long been used in Canada as an aid in mineral prospecting and in tracing geological structures. Many types of magnetometers are used, including the Dip-needle, Hotchkiss Superdip, Askania, Ruska and Sharpe, the latter being made by a company in Toronto. The vertical component of the magnetic field is the element usually measured in ground Magnetic surveys, and it is now becoming quite common for a new mineral property to have the Magnetic survey made in conjunction with a geological survey.

In contrast to the Seismic and Gravimetric methods, few mining companies own their own geophysical equipment. Rather, they engage the services of companies specializing in this type of work to make the required surveys. Such companies are Hans Lundberg, Koulonzine, Geoffroy and Company, Geotechnical Development Company, Geophysic Explorations Limited and Geoservice Limited. Magnetic surveys on individual properties cover a relatively small area as compared with surveys used in search for oil. Individual readings are commonly taken at 100-foot intervals along lines 400 feet apart, thus giving a very detailed magnetic map of the area under survey. In the past, such surveys were plotted without reference to any common datum. However, the Dominion Observatory, Magnetic Division, has now established in principal mining areas magnetic base stations, and most of the private companies making Magnetic surveys now tie in to these magnetic bench marks, thus making it easier for the surveys to be correlated. The cost of ground surveys of this type varies between \$2.00 and \$5.00 per acre.

## Airborne Magnetometer

In addition to ground Magnetic surveys, the airborne magnetometer has been used extensively in Canada during the past two years. The first commercial airborne magnetometer survey in the world was made in Canada in January, 1947, by Aero-Service Corporation of Philadelphia, surveying in the Sudbury area for the International Nickel Company. Since that time, approximately 100,000 square miles of Canada have been surveyed by this revolutionary new instrument.

Three organizations have been and are making airborne magnetometer surveys in Canada. These are:

1. Dominion Gulf Company
2. Aero-Service Corporation
3. Geological Survey of Canada.

The first mentioned company does work only on its own behalf using equipment developed by the Gulf research organization. Prior to January 1, 1948, it had covered large areas of Canada either by detailed or reconnaissance surveys. In western Canada it covered a very large area, the limits of which are not at present known, but it is thought to cover an area east and south of Edmonton. This work is continuing this year.





In eastern Canada Dominion Gulf Company made the following surveys in 1947:

1. Timmins-Kirkland Lake region surveys in detail during 1947. 4,300 sq. miles.
2. Olga Lake-Chibougamau region surveys in detail during 1947. 7,300 sq. miles.
3. Matachewan-Temagami region surveys by reconnaissance during winter of 1947-48. 7,400 sq. miles.

Total 1947 - 19,000 sq. miles.

In the spring of 1948 the Company made the following surveys:

1. Noranda area surveyed in detail this spring. 3,500 sq. miles.
2. Harricana-Turgeon region - partially surveyed in detail this spring. 5,500 sq. miles.
3. Island Falls-Cochrane region, proposed for this year. 8,000 sq. miles.

Aero-Service Corporation of Philadelphia is at present the only company making airborne magnetic surveys commercially. It made the first commercial survey in the world in the Sudbury area for the International Nickel Company in January, 1947. The exact limits of the area surveyed are not known but it is thought that the entire Sudbury basin was covered. In addition to the Sudbury region the company surveyed in detail a large area in the vicinity of Lynn Lake, Manitoba, for International Nickel Company, and about 1,000 square miles along the north shore of the St. Lawrence River at Mingan for Kennecott Explorations Ltd.

The Geological Survey of Canada commenced preliminary operations July 1, 1947 at Arnprior, Ontario, using equipment acquired from the United States Government. About 3,000 square miles covering the Ottawa-Perth region were completed in 1947. The adjacent Renfrew-Sharbot Lake area was completed this spring, and the Kirkland-Doucet region, Quebec, is being surveyed and will be completed this year. By the end of the present field season, approximately 15,000 square miles will have been covered. Reconnaissance surveys with the airborne magnetometer are commonly made at 1,000 feet elevation with lines  $\frac{1}{2}$  to 1 mile apart, while more detailed surveys are flown at altitudes below 500 feet and on lines  $\frac{1}{4}$  mile or less apart. The cost per unit area is far below that of a ground survey.

#### Electrical Methods

In mineral prospecting, Electrical methods are often used in conjunction with Magnetic Surveys. Self-potential and resistivity methods are commonly used and the equipment is usually designed by the individual companies. Most geophysics companies are prepared to undertake both Magnetic and Electrical surveys on mineral properties.

Electrical methods have not been used to any great extent in Canada in search for water, but it is more than likely that in the drier areas of the country, geophysical operations will play an important part in water geology in the future.



### Radio-Active Methods

Considerable advances have been made during the last few years in prospecting for radio-active minerals in Canada. The Geological Survey of Canada, during the war years, equipped its field parties with portable Geiger Counters, and since the war many private organizations have taken up the search for radio-active ores. The original portable Counters used by the Geological Survey were developed by the National Research Council, but these original instruments have now been improved, both in the matter of sensitivity and weight, and at present most Counters used in the field weigh less than four pounds. The manufacturing rights of the circuit developed by the National Research Council have been acquired by Electronic Association Limited of Toronto, who manufacture both complete sets and component parts. Douglas Foster of Vancouver also manufactures portable Geiger Counters, as well as Electronic Devices Co. Ltd., of Toronto, and Philips Industries Limited and X-Ray and Radium Industries Ltd., of Montreal.

August 16, 1948.



## Work of the Geological Survey of Canada

---

### GEOLOGICAL MAPPING

Since the inauguration of a Geological Survey of Canada, in 1842, about 27 per cent of the total area (3,700,000 square miles) of the Dominion has been mapped geologically on various scales and with varying degrees of accuracy. Much of this work has been done on the standard scales of either 1 inch to 1 mile or 1 inch to 4 miles, but, on the one hand, many maps, based on more detailed field work, have been issued on scales varying from 1 inch to 4,000 feet to as much as 1 inch to 500 feet, and, on the other hand, the results of more rapid reconnaissance or exploratory surveys have been published on scales of 8, 10, or even more miles to an inch. Comparatively little of this small-scale exploratory work has been done in recent years, and most of the earlier reconnaissance surveys as well as much of the 1-mile and 4-mile mapping of the last century require revision in the light of more modern standards.

In the following estimate of the geologically mapped part of Canada, three categories of maps have been considered: (1) modern, standard 1-mile maps, mainly, but including some on 1 inch to 2 miles as well as other areas mapped in detail; (2) modern, 4-mile maps, mainly, but including some on 8 miles or other odd scales in this general range; and (3) reconnaissance surveys on scales of 1 inch to 8 miles or less as well as other areas mapped on larger scales, principally 1 inch to 1 mile or 1 inch to 4 miles, but requiring revision. On this basis the following approximate figures have been derived:





	Area	1-mile	4-mile	Req'g Revision	% Mapped
Yukon	207,076	400	69,700	1,100	34.4
N. W. T.	1,309,682	2,100	83,700	21,100	8.2
B. C.	355,855	9,800	98,500	41,700	42.1
Alta.	255,285	7,500	62,000	35,500	41.0
Sask.	251,700	3,300	83,100	68,100	61.5
Man.	251,832	4,200	82,900	15,500	41.7
Ont.	407,262	13,000	63,700	58,900	33.3
Quebec	594,434	12,000	55,900	47,100	17.3
N. B.	27,985	7,000	3,300	17,700	100.0
N. S.	21,428	5,500	--	15,900	100.0
P. E. I.	2,184	--	--	2,200	100
Total	3,684,723	64,800	602,800	324,800	27.0

The figures obtained for the areas covered by the 4-mile maps and those 'requiring revision' are exclusive of overlapping maps published on a larger scale. Consequently, the figures for 'percentage mapped' were obtained directly from the sum of the three map categories as a percentage of the total area of each province or territory.

#### FIELD WORK

At the time when the Geological Survey was formed, Canada consisted only of part of the present provinces of Ontario and Quebec. The early work was mainly exploratory, but the great period of far-flung explorations followed Confederation, in 1867, and in the succeeding few decades was extended into the Arctic regions and across the whole of the Dominion. Then followed a phase in which selected areas, chosen mainly for their potential economic interest, were mapped on various scales. These studies were conducted very largely in the more settled or more



accessible regions of Canada, and not uncommonly in areas where mineral discoveries of note had been directly responsible for both settlement and access. In more recent years the widespread use of aircraft and of air photographs has facilitated geological mapping in the more remote regions of Canada, particularly in Northwest Territories and Yukon, which are a direct responsibility of the Federal Government.

In the past decade or more, Geological Survey field parties have been distributed as follows:

Yukon-----	1 to 2 parties	
Northwest Territories---	2 to 4	"
British Columbia-----	4 to 9	"
Alberta-----	2 to 6	"
Saskatchewan-----	1 to 4	"
Manitoba-----	1 to 5	"
Ontario-----	2 to 4	"
Quebec-----	4 to 8	"
New Brunswick-----	1 to 3	"
Nova Scotia-----	1 to 3	"

Within the last couple of years the Survey has been able to recruit its field staff materially, and, in addition, as in the past, has offered temporary employment, during each field season, to university teachers and to university graduates with sufficient experience to take charge, under supervision, of field parties. Altogether 57 parties commenced field work in 1948, of which 17 are in charge of officers engaged only for the field season and 18 others under geologists who have not achieved permanent status with the Geological Survey. The remaining 22 parties are in charge of members of the permanent staff of the Survey, which now includes 32 geologists of various ranks, many of whom are spend-



ing part of their field time in supervising the work of the temporary employees. The 57 parties for this year are distributed as follows:  
Yukon, 4; Northwest Territories, 8; British Columbia, 13; Alberta, 6;  
Saskatchewan, 3; Manitoba, 9; Ontario, 4; Quebec, 4; New Brunswick, 2;  
Nova Scotia, 2; and general projects, 2.





# GEOLOGICAL PROGRAM FOR 1948

---

## NORTHWEST TERRITORIES

### Continuing projects

1. Yellowknife Mineral Belt  
1" = 1,000 ft.  
J. F. Henderson  
I. Brown
2. Resident Geologist Yellowknife. To  
continue study of mineral industry  
M. Feniak

### New Projects

3. Carp Lake 112-114; 63-64  
1" = 4 mi.  
M. L. Millar
4. Wecho East half 114-115; 63-64 850E $\frac{1}{2}$   
1" = 4 mi.  
D. H. Yardley
5. Aylmer 108-110; 64-65 76C  
1" = 4 mi.  
C. S. Lord
6. Lac de Gras  
1" = 1,000 ft.  
R. E. Folinsbee
7. Carp Lake 85P  
1" = 1,000 ft.  
L. P. Tremblay
- 8 Indin East half 114-115; 64-65 86B E $\frac{1}{2}$   
(Base available - should be worked in  
conjunction with Fort Enterprise (9) )  
1" = 4 mi.  
Y.O. Fortier

## YUKON

### Continuing Projects

1. Whitehorse 134-136; 60-61  
1" = 4 mi.  
J.O. Wheeler
2. Dezadeash 136-138; 60-61  
1" = 4 mi.  
E.D. Kindle
3. McQuesten 136-138; 63-64  
Glenlyon 134-136; 62-63  
1" = 4 mi.  
1" = 4 mi.  
H.S. Bostock

### New Projects

4. Mayo  
1" = 1,000 ft.  
K. C. McTaggart  
R.L. Christie



BRITISH COLUMBIAContinuing Projects

- |   |                               |
|---|-------------------------------|
| 1. Whitesail 126-128; 53-54 93E                               | 1" = 4 mi.<br>S. Duffell      |
| 2. Aitken Lake 125-126; 56-57                                 | 1" = 4 mi.<br>E.F. Roots      |
| 3. Ymir 117-117°15; 49°15-49°30                               | 1" = 1 mi.<br>A.L. McAllister |
| 4. Zeballos 126° 30-127; 49°45-50                             | 1" = 1 mi.<br>J.W. Hoadley    |
| 5. B.C. Office and various assignments<br>including dam sites | W. E. Cockfield<br>E. Hall    |

New Projects

- |  |                              |
|--|------------------------------|
| 6. Palaeontological Collections, Vancouver Is. | J.L. Usher                   |
| 7. Nelson 117-118; 49-50 82FW                  | 1" = 4 mi.<br>H.W. Little    |
| 8. Revelstoke 118-119; 50-51 82KW              | 1" = 4 mi.<br>A.G. Jones     |
| 9. Palaeontological studies                    | V.J. Okulitch                |
| 10. Groundhog Coal Area                        | A.F. Buckham                 |
| 11. Vancouver Sheets                           | 1" = 1 mi.<br>J.E. Armstrong |

BRITISH COLUMBIA AND ALBERTA

- |  |           |
|--|-----------|
| 1. Palaeontological studies at Princeton | W.A. Bell |
| <u>ALBERTA</u>                           |           |

Continuing Projects

- |  |                              |
|--|------------------------------|
| 1. Mount Head 114°30-114°45; 50°15-50°30 | 1" = 1 mi.<br>R.J.W. Douglas |
| 2. Alta Peche Lakes 118°45-119; 53°45-54 | 1" = 1 mi.<br>E.J.W. Irish   |
| 3. Pleistocene and Groundwater           | A. M. Stalker                |
| 4. Cardston 113°15-113°30; 49°-49°15     | 1" = 1 mi.<br>E. P. Williams |

New Projects

- |   |                               |
|---|-------------------------------|
| 5. Grande Cache                             | 1" = 1 mi.<br>R. Thorsteinson |
| 6. Subsurface stratigraphy west of Edmonton | R. de Witt<br>J.R. Johnston.  |



SASKATCHEWANContinuing Projects

- |  |                               |
|--|-------------------------------|
| 1. Snake Rapids 102°30'-102°45'; 52°30'-54°45' | 1" = 1 mi.<br>G.E.P. Eastwood |
| 2. Subsurface stratigraphy                     | R.T.D. Wiikenden              |
| 3. Lake Athabaska Radioactive ores             | A.M. Christie                 |

MANITOBAContinuing Projects

- |  |                              |
|--|------------------------------|
| 1. Nokomus Lake 100°45'-101°; 55-55°15'<br>Moody Lake 100°30'-100°45'; 55-55°15' | 1" = 1 mi.<br>D.S. Robertson |
| 2. Pleistocene and Groundwater   | J.A. Elson                   |

New Projects

- |   |                           |
|---|---------------------------|
| 3. Colins Point 101°15'-101°30'; 55-55°15' 63N3W<br>(Complete Crowduck Bay 99°30'-99°45';<br>54°30'-55 about one month) | 1" = 1 mi.<br>M.J. Frarey |
| 4. Churchill<br>General investigation with special<br>attention to permafrost   | E.B. Owen                 |
| 5. Pleistocene and groundwater  | E.C. Halstead             |

Several 1-mile bases available for thesis areas

- |                                  |                                |
|----------------------------------|--------------------------------|
| 6. Uhlman Lake 64B 98-100; 56-57 | 1" = 4 mi.<br>G.M. Wright      |
| 7. Brochet 64F 100-102; 57-58    | 1" = 4 mi.<br>N.R. Gadd        |
| 8. Weldon Bay 63 14 <sup>k</sup> | 1" = 1 mi.<br>J.O. Kalliokoski |
| 9. General supervision           | J.M. Harrison                  |

ONTARIOContinuing Projects

- |                                |                               |
|--------------------------------|-------------------------------|
| 1. Southwestern Ontario        | J.F. Caley                    |
| 2. Ossian Township             | 1" = 1,000 ft.<br>J.B. Currie |
| 3. Pleistocene and Groundwater | E.E. Deane                    |





QUEBECContinuing Projects

- |                                       |   |
|---------------------------------------|---|
| 1. Beauchastel-Dasserat               | 1" = 1,000 ft.<br>C.H. Stockwell<br>K.R. Dawson |
| 2. Eastern part of Southern gold belt | 1" = 1 mi.<br>A.S. MacLaren                     |
| 3. Eastern Townships                  | 1" = 1 mi.<br>H.C. Cooke                        |

NEW BRUNSWICKContinuing Projects

- |   |                              |
|---|------------------------------|
| 1. Hampstead<br>(Part of systematic coverage) | 1" = 1 mi.<br>G.S. MacKenzie |
| 2. Chipman (Coal)                             | J.E. Muller                  |

NOVA SCOTIAContinuing Projects

- |                            |                          |
|----------------------------|--------------------------|
| 1 & 2. Systematic coverage | 1" = 1 mi.<br>L.J. Weeks |
|----------------------------|--------------------------|

New Project

- |                |   |
|----------------|---|
| 3. Coal fields | T.B. Haites<br>W.S. Shaw<br>B.R. MacKay |
|----------------|---|

OTHER PROJECTS

- |                                      |  |
|--------------------------------------|--|
| 1. Geology of Iron Ore Deposits      | T.L. Tanton                              |
| 2. Airborne Magnetometer             | G. Shaw<br>G.P. Crombie<br>F.P. DuVernet |
| 3. Geology of Radioactive substances | H.V. Ellsworth<br>A.H. Lang              |



TOPOGRAPHICAL SURVEY  
SUMMARY FIELD PROGRAM - 1948  
-----

<u>Province</u>	<u>Scale</u>	<u>Class</u>	<u>Areas</u>	<u>Square Miles</u>	<u>Total</u>
Nova Scotia	1 mile	Contouring	21 A/11, 12, 14, 16	1275	2,456
			11 K/2, 7	689	
			11 F/14, 15	492	
New Brunswick	1 mile	Contouring	21 G/9, 10	836	3,210
		"	21 H/10, 13	514	
		"	21 I/3, 4 E. 1/2	623	
		Planimetric	21 G/1, 2, 7, 8	1237	
Quebec	1 mile	Planimetric	32 A/1, 2, 7, 10, 15	1988	5,363
			22 B/2, 7, 8, 9, 10, 15, 16	2766	
			22 G/1, 31 H/8	609	
Ontario	1 mile	Planimetric	31 D/11	284	1,525
		Contouring	41 G/9, 14, 15, 16	755	
			41 H/12, 13	486	
Saskatchewan	1 mile	Planimetric	74 A/1, 2	649	1,311
			73 P/15, 16	662	
Alberta	1 mile	Contouring	82 J/10 W. 1/2 J/14, E. 1/2	379	379
British Columbia	1 mile	Contouring	104 A/8, 9, 15, 16	1318	19,424
		"	104 H/1, 2, 7, 8	1298	
	1/4 mile	"	93 E/4, 5, 12, 13	1359	
	1/4 mile	"	93 F	5703	
	1/4 mile	"	94 M, 104 P	9746	
Yukon	1 mile	Contouring	105 M/14, 15	462	26,110
	1 mile	"	106 D/2, 3	524	
	1/4 mile	"	105 F, 115 H	9070	
	1/4 mile	"	115 G, E. 1/2 115 F	6586	
	1/4 mile	"	105 A, 95 D	9468	
Northwest Territories	Detail	Planimetric		150	1,969
	1 mile	"	86 B/4, 5, 11, 12, 14	1291	
			85 D/13, 14	528	
TOTAL				-	61,747



Air Photography Carried Out by Provincial Governments:

Insufficient information is available at Ottawa to satisfactorily report on the air photography carried out by the Provincial Governments.

Each year the National Photographic Air Library, Ottawa, receives an index of the work accomplished by the Provinces, but the report is not in sufficient detail to provide more than a general picture of what areas have been covered and the type of photography. It is felt that this information is satisfactory and that if and when further details are required they can then be secured.

Unless fully justified, there is no overlapping or duplication between the photography of the Federal and Provincial Governments.





# SUMMARY OF AIR PHOTOGRAPHIC PROGRAM 1948

(Areas in Square Miles)

<u>Province</u>	<u>V e r t i c a l</u>		<u>Trimetrogon</u>	<u>Total</u>
	<u>R.C.A.F.</u>	<u>Commercial</u>		
Prince Edward Island	-	-	-	-
Nova Scotia	-	-	-	-
New Brunswick	-	-	-	-
Quebec and Labrador	58,868	41,876	251,900	352,644
Ontario	1,696	1,500	-	3,196
Manitoba	9,134	23,899	-	33,033
Saskatchewan	6,904	-	-	6,904
Alberta	20,121	2,902	-	23,023
British Columbia	80,897	-	-	80,897
Yukon	88,405	-	-	88,405
Northwest Territories	<sup>x</sup> 123,220	-	468,700	591,920
TOTALS -	<u>389,245</u>	<u>70,177</u>	<u>720,600</u>	<u>1,180,022</u>

Low oblique photographs to be taken at some western power sites, and in the Northwest Territories for identification of points at which astronomical fixes are required.

<sup>x</sup> Additional 20,000 square miles optional.



TOPOGRAPHICAL MAPPING IN CANADA  
IN SQUARE MILES

PROVINCE	Scale	To Dec. 31, 1945		Jan. 1, 1946 - Dec. 31, 1947		Total Planimetric	Total Contoured	Total Mapped	Published		In Hand		TOTAL
		Planimetric	Contoured	Planimetric	Contoured				Planimetric	Contoured	Advance Available	Not Yet Available	
Nova Scotia	1 mile 2 mile 4 mile	3,800 4,722 -	7,819 2,304 -	7,730 -	1,159 -	11,530 4,722 -	8,978 2,304 -	20,508 7,026 -	3,954 4,722 -	7,734 2,304 -	7,632 -	1,188 -	20,508 7,026 -
						16,752	11,282	27,534	-	-	-	-	27,534
Prince Edward Island (compiled by mapped on 1 mile scale)	1 mile 2 mile 4 mile	- 2,164 -	2,164 -	- -	- -	2,164 -	2,164 -	2,164 -	- -	2,164 -	- -	2,164 -	2,164 4,368
New Brunswick	1 mile 2 mile 4 mile	5,814 1,890 -	5,119 4,558 -	16,311 -	208 -	22,125 1,890 -	5,327 4,558 -	27,452 6,448 -	6,078 1,890 -	5,119 4,558 -	9,216 -	7,039 -	27,452 6,448 -
						24,015	9,885	33,900	-	-	-	-	33,900
Quebec	1 mile 2 mile 4 mile	16,305 36,950 30,978	22,635 10,955 14,254	4,408 -	- -	20,713 36,950 30,978	2,635 10,955 14,254	43,348 47,905 45,232	18,932 36,950 30,978	22,635 10,955 14,254	1,781 -	- -	43,348 47,905 45,232
						80,641	47,644	136,485	-	-	-	-	136,485
Ontario	1 mile 2 mile 4 mile	4,681 28,614 109,416	35,292 2,900 32,510	2,354 6,300	5,412 3,900	7,035 28,614 115,716	40,704 2,900 36,410	47,739 31,514 152,126	15,512 28,614 109,416	26,941 2,900 32,510	5,286 -	- 6,300	47,739 31,514 152,126
						151,365	80,014	231,379	-	-	-	-	231,379
Manitoba	1 mile 2 mile 4 mile	3,539 10,442	1,117 12,316	6,003 22,170	- 11,116	9,542 32,612	1,117 23,432	10,659 56,044	4,658 10,442	- 12,316	3,721 33,286	2,280 -	10,659 56,044
						42,154	24,549	66,703	-	-	-	-	66,703
Saskatchewan	1 mile 2 mile 4 mile	1,212 1,035 86,335	496 -	7,774 8,606 9,888	- -	8,986 8,606 96,223	456 -	9,482 9,631 96,223	1,456 8,610 86,335	864 -	517 5,721	6,645 9,888	8,482 9,631 96,223
						114,840	496	115,336	-	-	-	-	115,336
Alberta	1 mile 2 mile 4 mile	3,026 4,334 19,774	18,715 4,334 12,380	- 10,868 5,156	1,059 -	3,026 4,334 24,930	19,774 10,868 12,380	22,800 15,202 37,310	- - 19,774	18,695 4,334 12,380	3,203 10,868 -	902 5,156	22,800 15,202 37,310
						32,290	43,022	75,312	-	-	-	-	75,312
British Columbia	1 mile 2 mile 4 mile	- 13,199 17,287	- 7,996 52,284	- -	7,342 7,996	- 7,996	20,541 17,287 70,138	20,541 25,283 70,138	- -	16,799 17,287 58,598	3,066 7,996 864	676 10,576	20,541 25,283 70,138
						7,996	107,966	115,962	-	-	-	-	115,962
Yukon	1 mile 2 mile 4 mile	- 1,917	- 31,388	- -	1,770 -	- 1,917	1,770 45,232	1,770 47,149	- 1,917	- 21,880	1,770 4,729	- 18,633	1,770 47,149
						1,917	47,022	48,919	-	-	-	-	48,919
Northwest Territories	1 mile 2 mile 4 mile	2,194 131,009	- -	1,638 12,711	- -	4,032 143,720	- -	4,032 143,720	3,548 143,720	- -	484 -	- -	4,032 143,720
						147,752	-	147,752	-	-	-	-	147,752
Totals		505,627	304,996	130,113	62,714	639,406	374,244	1,003,650	532,806	295,347	104,040	71,457	1,003,650
GRAND TOTALS								1,003,650					1,003,650

2. Notes: Apparent discrepancy between this figure and area of Province is due to over-lapping in figures where area has been mapped on different scales.



CANADIAN INSTITUTE OF MINING AND METALLURGY  
COMMITTEE ON EDUCATION

---

Report  
on  
EDUCATION FOR THE MINERAL INDUSTRY  
TO THE

FIFTH ANNUAL CONFERENCE

PROVINCIAL MINISTERS OF MINES OF CANADA

Jasper - Alberta  
1948

Committee Organization

The Provincial Ministers of Mines at their Fourth Annual Conference, Keltic Lodge, Cape Breton, September 1947, stated:

"The Conference acknowledges the admirable work done by the Canadian Institute of Mining and Metallurgy on Educational and Vocational Training, and requests that organization to continue its work."

The Canadian Institute of Mining and Metallurgy's Committee on Education for the Mineral Industry, consists of representatives from the five divisions of the Institute and is designed to serve primarily as a co-ordinating committee for the work of the Committees on Education organized in each Division. The Committee, for the Institute Council year 1948-49, consists of the following;

Alan E. Cameron, Halifax, N. S. (Chairman)  
J. B. deHart, Calgary, Alta. (Western Section Coal Division)  
H. C. M. Gordon, Sydney, N. S. (Eastern Section Coal Division)  
G. M. Brownell, Winnipeg, Man. (Geology Division)  
J. M. Cummings, Vancouver, B. C. (Industrial Minerals Division)  
F. A. Forward, Vancouver, B. C. (Metallurgy Division)  
R. E. Barrett, Toronto, Ontario. (Metal Mining Division)





The Committee is instructed to:

(1)

Explore and report on the educational needs of the Canadian Mineral Industry, with particular reference to co-ordinating and improving the educational services rendered to that industry by universities, vocational training schools, and other organizations and governments, and;

(2)

Explore with Canadian universities the possible granting of credits towards post-graduate degrees in mining and metallurgy, for research work performed in suitable laboratories elsewhere.

The five divisions of the institute are indicated in the list of the personnel of the Committee. Educational problems vary from division to division, but in general divide into two main categories

- (a) Vocational and apprenticeship training,
- (b) University engineering education.

#### Vocational and Apprenticeship Training

Geology is essentially a science and its application to industry calls for university grade personnel. Prospecting is normally part of the functions of the mine geologists for supervision and direction, but many of the actual mineral finds are made by the self-educated prospector, and the geologists have a direct interest in advancing their technical skill. Night Schools, and short courses for prospectors are offered at some of the universities and technical schools, and in some mining districts. They are well worth continuation and expansion under government support.

The industries represented by the other Divisions require various technical skills and trade proficiency if these industries are developed through "on the job" training of personnel for the specific work requirements of each unit of the industry. Two Provinces, Nova Scotia and Quebec, for some time operated mine apprentice projects for trade training in the mining and treatment of gold ores. These projects, designed to develop aptitude for mining jobs amongst unemployed young men during the depression of the 'thirties', were discontinued when the pressure of enlistment for



For many years the Department of Mines of the coal-producing provinces have had supervision over the examination and certification of personnel, both the coal-miner as a tradesman and the mine official as a technician. The way has always been open for the competent tradesman to increase his technological skill and go forward to positions of responsibility within the industry. Present-day mechanized mining, however, requires a great increase in fundamental scientific knowledge and this can only be obtained through longer attendance at educational institutions. The Provincial Department of Mines' standards of certification are being revised and raised, and there is a growing demand for Coal Mining Engineering graduates.

The Committee on Education and Vocational Training of the Coal Division of the Institute is working in close co-operation with the officials of the respective Provincial Departments of Mines towards the development of a uniform syllabus of training so that a certificate from one Department will be in every way comparable to that of another. It believes that minimum requirements for certification for, at least the senior mine officials, should be based upon education of university grade.

The Mineral Industry uses many technical skills and operations that are common to other industries. Trade skills, such as, engine and machine operators, electricians, plumbers, steam-fitters, carpenters, mechanics, and machinists are all required in the normal operation of a mine, mill or metallurgical plant. Problems relating to certification for competency in these trades and occupations are anticipated in the light of Provincial Legislation under the Departments of Labor of the various Provinces. The Committee on Education for the Mineral Industry believes that it should not deal with these problems until the Departments of Labor of the various Provinces have clarified the procedures to be adopted and until the Provincial



Departments of Education have developed adequate training facilities in the form of Vocational and Technical Schools.

The Committee respectfully calls to the attention of the Ministers of Mines in Conference, the complexity of this general problem. Certification for competency, by Government Departments of Mines, or of Labor, to be gained through attendance at courses of instruction given in Vocational and Technical Schools, can be of little value unless the programmes of instruction are closely correlated with the needs of the industries to be served. It believes that the Mineral Industry can best be served through "on the job" training and apprenticeship schedules, following or contemporaneous with Vocational and Technical School instruction obtained either through direct attendance, or by correspondence. Such procedures should produce competent personnel for the safe and economical production of the products of the Industry.





Technical and University Education

The committee is co-operating effectively with other organizations concerned in engineering education, particularly with the National Conference of Canadian Universities, the American Society for Engineering Education, the Committee on Education of the Dominion Council of Professional Engineers, and that of the Canadian Council of Professional Engineers and Scientists.

A joint committee on student guidance has been set up and local student councillors have been designated in all centres in Canada. Through talks to groups of high school students and personal interviews these councillors have given guidance to many young people in their choice for a future career in engineering and industry.

A Sub-Committee has been appointed to inquire, through questionnaire, into the broad question of exodus of the young engineer from Canada to the United States and elsewhere and to obtain opinions and ideas on how they may be attracted to work in Canada either through increased financial returns for their efforts or through increased opportunities for further academic training. Particular attention is being given to possible changes in university curricula to improve the professional training for the mineral industry by the use of government scientific laboratories and the research laboratories of industry for training at graduate school level.

Respectfully submitted on behalf of the Committee.

Alan E. Cameron,  
Chairman.



REPORT OF CHAIRMAN  
COMMITTEE ON RESEARCH-COAL DIVISION, C.I.M.  
as presented at Jubilee Meeting C.I.M.  
Vancouver, B.C.  
April 1948

The activities of the Committee on Research during the past year have pertained almost solely to implementing two recommendations of this Committee at the Annual C.I.M. 1946 and 1947 meetings held in Montreal and Ottawa, which read as follows:

- (2) That the Fuels Division of the Bureau of Mines, Ottawa, be requested to assemble information on coal research conducted in the United States, Great Britain, and other countries, which is pertinent to Canadian problems in the utilization of coal;
- (3) That such information be distributed, either directly by the Bureau of Mines or by the Secretary of the Coal Division, C.I.M.M., among Canadian research organizations and coal mining companies.

These and other recommendations as published in the July, 1947 issue (page 345) of the Canadian Mining & Metallurgical Bulletin were endorsed for the Institute by the Executive Committee of Council.

Proposed Quarterly Review on Coal Technology

As an information circular service to the Canadian coal industry, a Coal Technology Review publication has been planned and No. 1 (January 1948) issue was prepared in draft manuscript form in two parts, viz.,

"Trends in the Mining and Preparation of Coal"

- (1) Trends in Coal Mining, Mechanization, Transportation,  
Etc., by A. Ignatieff;
- (2) Trends in Coal Preparation, by E. Swartzman.

In addition to sending copies to members of the Committee on Research, copies of the draft manuscript were supplied to the Secretary of the Coal Division, under date of February 3, 1948, and during that month were circulated to the Chairman and Executive Committee of the Division.

The main purpose of circulating the draft manuscript was to obtain an expression of opinion as to whether or not the proposed inauguration of the information circular (or news letter) service to the Canadian coal industry was worthwhile and if approved, to canvass opinions as to the best method of publication. The alternative plans suggested were:

- (a) Acceptance of this and future information circulars for publication in the C.I.M. Bulletin (after editorial attention), subject to the approval of the Central Executive Committee of the Coal Division; or



- (b) Their publication as Fuels Division-Bureau of Mines quarterly information circulars reproduced in ditto form, with a review in the Coal Division Section of the Bulletin.

A third means of publication considered was the Dominion Coal Board.

The first plan, namely, to be printed in the Bulletin, had the preference of the undersigned, because of its larger circulation, approximately 4300, and because it would promote future information circular manuscripts from other Canadian coal research organizations. Another reason for its preference was hesitation at the head offices of the Bureau of Mines and the Mines, Forests, and Scientific Services Branch to agree to the second proposal, viz., as Fuels Division - Bureau of Mines publications.

Below in tabular form are shown summarized opinions of members of the Research Committee and others.

<u>Name</u>	<u>Preference as to means of publication</u>	<u>Remarks</u>
<u>Members of Research Committee</u>		
W.A. Lang (Edmonton)	In Institute Bulletin or failing that by Dominion Coal Board	Better for other re- search organizations
J.M. Davidson (Lethbridge)	By Fuels Division-Bureau of Mines circular	Better for preparation and for distribution to coal men and com- panies whether or not C.I.M. members.
Dr. N.A. Parlee (Sydney)	"Not sure whether the Bulletin is the best place for it or not but it would seem so"	
Dr. R.D. Howland for Dr. R.D. Smith (Halifax)	In C.M.M. Bulletin	Offer of N.S. Research Foundation to provide some manuscript
<u>Others</u>		
W.C. Whittaker (Chairman, Coal Division & Member Dominion Coal Bd.)	Dept. of Mines & Resources (presumably Fuels Division- Bureau of Mines publication)	Not in favour of pub- lishing in Institute Bulletin although o.k. if Coal Division Sec- tion feels it desirable.
J.J. McIntyre (Coleman, Alta.)	In C.M.M. Bulletin	Circular quite valuable for getting recent arti- cles with information on different subjects.





Practically all of the replies expressed approval of the proposed coal technology review as information circulars to the coal industry. Typical examples of such approval are as contained in selected replies as per copies attached, viz.,

Letter Feb. 17 from W.A. Lang - Senior Research Chemist  
Research Council of Alberta, Edmonton.

Abstracts from letter of Feb. 25 from J.M. Davidson  
(Lethbridge Collieries, Alberta);

Letter March 1 from J.J. McIntyre, Convenor of Western  
Section, Committee on Mining Methods.

Letter Feb. 18 from W.C. Whittaker, Chairman, Coal Division  
and member of Dominion Coal Board.

As a means of publication, the bulletin of the Institute was preferred by four members of the Committee (including myself as chairman). The fifth member was in favour of a Fuels Division-Bureau of Mines circular, with no expression of preference as yet from the sixth member.

A copy of letter from the Chairman of the Coal Division to its secretary (as supplied by Mr. Allingham) is attached. A review of Mr. Whittaker's preference as to publication, together with those of Mr. Burchell as divisional vice-chairman, and of Prof. Flynn and Wm. Wilson respectively chairmen of the eastern and western sections of the Division are given in the Mimeographed "Agenda" of Fourth Annual Business Conference-Coal Division C.I.M. Vancouver, April 5, 1948.

Although the original purport of this committee's recommendations was to assemble and distribute information on coal research conducted in the United States, Great Britain and other foreign countries, the scope of the coal technology review may well be extended to include publications of the Fuel Research Laboratories and other such research organizations in Canada. Such extension of scope, the undersigned wishes to emphasize and recommend.

Ottawa, March 24, 1948  
(Revised March 30th)

R. E. Gilmore,  
Chairman, Committee on Research,  
Coal Division, C.I.M.

Please note: A reprint of the article in the July, 1947, issue of the C.I.M. Bulletin, and copies of the two Coal Technology Review Publications and of the letters referred to in Mr. Gilmore's report are available at the registration desk.

W.A.L.



QUEEN'S UNIVERSITY  
KINGSTON, ONTARIO

August 12th, 1948.

Mr. W.A. Lang,  
Secretary, Research Council of Alberta,  
EDMONTON, Alta.

Dear Sir:-

Re: Work of Committee on Geological Research,  
Geology Division, C.I.M.M.

In reply to your inquiry of August 5th, the chief accomplishments of the Committee on Geological Research of the Geology Division, C.I.M.M., in the past two years have been -

1. A survey of the research facilities available for geological investigations throughout the Dominion,
2. A review of Canadian geological problems requiring investigation as suggested by various Canadian Field and University geologists, (see Bull. C.I.M.M., 1947. p.p. 351-370).
3. Initial steps to have formed, under the auspices of the Department of Mines and Resources, a National Advisory Committee on Geological Research in order to more effectively coordinate research programs in various parts of the country and to insure that proper attention is given to those projects which will best further the development of Canadian mineral resources.
4. To bring about some measure of cooperation between field geologists in local areas and others capable of undertaking detailed investigations on problems within their mining district. Much more remains to be done in this respect and the Committee would like to see it made financially possible to inaugurate a program whereby experts both on ore deposits and structural geology might visit the major mining districts and by lectures and informal talks inform local groups of field geologists as to new advances in the science and techniques now available. Two groups which are particularly interested in cooperative research of this type are the field geologists in the Noranda and Porcupine areas.
5. The Committee has also interested itself in the problem of establishing additional research chairs in the departments of geological sciences of our Universities since at the present time, there is not a single full-time research geologist in the Dominion who is devoting all his efforts to the solution of



Mr. W.A. Lang, (Cont'd).

fundamental geological problems. Any advance in this respect will depend on the support given by the mineral industry of the country as a whole.

Yours very truly,

J.E. Hawley,  
Chairman, Committee on Geological Research,  
Geology Division,  
Canadian Institute of Mining and Metallurgy.

JEH/LB.

Please Note

Two copies of Dr. Hawley's paper, "Research in the Geological Sciences in Canada," are available for borrowing at the Registration desk for those desiring detailed information on this subject.

W.A.L.





Suggestions for a Research Program for the Canadian  
Coal Industry with Brief Resume of the Work of the Research Council  
of Alberta on Coal - by W. A. Lang

---

The primary responsibility of a research program for the Canadian Coal Industry is the orderly development of the coal reserves of Canada and the creation of new markets for coal mined in Canada. The program should be planned as a long term policy, and should be undertaken with the best research facilities possible and with the best trained personnel available. In addition to investigations undertaken by the Dominion and Provincial governments the coal operators, coal consumers, industrial organizations and manufacturers of coal mining and coal burning equipment should be urged to take an active part in sponsoring fuel research.

The program should include pure and applied research; also economical investigations related to the costs of mining, preparing, processing and marketing of coal. Investigations for the health and safety of miners and of the general welfare and security of the mining community should also be studied.

Liaison should be maintained between the Dominion and Provincial Departments of Mines and Resources, the Dominion and Provincial research organizations, and the co-operating industries, in order that duplication of effort in research is prevented and maximum efficiency from the funds available for research is obtained.

The coal industry of Canada is unique in that there are enormous reserves of coal ranging in rank from lignite to semi anthracite, and yet more than 50 per cent. of the coal consumed in Canada is imported. The reason is not that Canadian coals could not meet the market requirements with respect to quality and quantity but rather that the important producing areas are



distant from the areas of densest population. Cost of transportation has therefore been a limiting factor in their utilization. It is suggested that the Dominion Government should give further consideration to guaranteeing long term increased subsidies in the interest of Canadian economy, and in order that the coal industry can plan a long range development program which ultimately would reduce costs of mining and preparation and allow for standardized products. A long range development program would also allow for maximum recovery of the coal in a mine.

In this submission it will not be possible to give details of specific researches that should be undertaken. However some lines of research which might be considered are indicated and suggestions regarding the organization considered necessary for implementing the research program made.

#### Reserves

A prerequisite to the development of any mineral industry is a knowledge of the extent and nature of the reserves, and of efficient and economical methods for recovering the mineral in the reserves. Thus geological surveys are necessary to determine the real extent of the various coal basins, the depth and character of the overburden and the number and thickness of the seams. More detailed information could be gained from a development program which included core drilling and chemical and physical examinations of the coal recovered from the cores.

Too often coal properties have been developed with inadequate knowledge of the continuity of the seams or the quality of the coal in the seams, and this has resulted not only in the abandonment of the property but in rendering large amounts of coal in adjacent areas unfit for development. The state of



Illinois is cited as having a well organized geological and development program for its coal industry.

### Mining.

The labour situation has forced the mechanization of a great many coal mines. Manufacturers of mining equipment have aided this development by improving the equipment used in all phases of mining particularly in machines used in coal cutting and coal loading. However much research still requires to be done in order that all operations can be synchronized. Haulage in the underground mine is becoming a major bottleneck in the mining operation. The introduction of Diesel locomotion may largely solve this difficulty but it may also introduce problems in connection with the safety and health of the miners. Very careful investigations will be required to ensure that this hazard is prevented.

Large quantities of coal are now being mined by open cast or stripping operations, also a form of mechanized mining. Strip mining is likely to increase, and this introduces the need for improved equipment for earth and rock removal and of a planned program of reclamation for the mined over areas in agricultural districts.

Mechanized mining has greatly increased the coal recovery per man hour, but unfortunately it is responsible for the production of more fine coal and a greater percentage of impurities in the form of partings, mined with the coal, than is the case with non-mechanized mining.

### Preparation Processing and Utilization

Research should be undertaken looking to preparation for market of clean coal of uniform size and quality, at reasonable cost and with least loss of combustible matter. A standardized high-quality product is essential to good marketing and satisfied customers. This cannot be emphasized too strong-







ly since Canadian coal has to compete in certain markets with imported coals that are standardized, and with natural gas, oil and hydro-electric power which are more desirable fuels from the standpoint of cleanliness and convenience.

Investigations of coal cleaning are therefore of major importance, and since more fine coal is being produced in mining, processes for handling this size of material are urgently needed. Disposal of the fine coal is also a problem. A certain percentage of the fines can be mixed with the larger sizes, some can be sold for pulverized fuel firing or coke making and some is made into briquettes. The briquetting process is costly and the asphalt used as the binding material tends to make briquetted fuel more smoky than the coal from which the briquettes were made. However the briquetting industry has shown a steady increase in recent years and should continue to do so. This increase could be greatly accelerated if the cost of binder were reduced or a satisfactory binderless process developed. There is, therefore, a definite need for research on briquetting especially with a view to the discovery of new and better binders. The development of a cheap binder which would give briquettes that could be burned without smoke or malodours, and that could be handled and stored satisfactorily would be a boon to the coal industry.

In Western Canada there are large reserves of subbituminous and lignitic coals which are ideal for domestic purposes since they are reactive fuels and are smokeless or nearly so during combustion. However because of their moisture content they should not be shipped long distances or stored in the open for long periods. These conditions limit their market to areas adjacent to the mines. It means also that the mining season is considerably shortened and the cost of mining thereby increased, beyond what it would be if the mines were operating for the full twelve months.



Investigations to produce a clean high heat value storable fuel from these lower rank coals should be encouraged. Researches to date on this subject have shown interesting possibilities. Whether any process will be commercially feasible remains to be proven.

Coal has been and should continue to be the chief source of heat and power, but it is becoming increasingly important as a source of synthetic chemicals including synthetic gasoline and other oils. At the present time, in the United States, gasification and chemical synthesis are among the most intensely active fields of coal technology. Canada has limited developed oil resources, but an enormous potential source of oil in her coal reserves. Attention should therefore be given to keeping abreast of processes for producing gasoline and oil from coal.

The largest single market for bituminous coal is as a fuel for steam locomotives. However, the supremacy of coal is being challenged by oil burning locomotives of various types. Similarly the use of coal for the domestic market is meeting increased competition from natural gas, oil and hydro-electric power. The need to develop coal burning equipment to improved efficiency is a prime necessity if coal is to maintain its present markets let alone increase them.

The production in the future of synthetic liquid fuels from coal, of high B.t.u. pipeline gas from coal, and the operation of gas-turbine electric plants at the mine may be thought of as permitting possible alternative methods of utilizing the energy in coal.

#### Economic Research

The promotion and establishment of the use of Canadian coal to meet Canada's coal needs requires economic investigations. These researches should include cost analysis of the various stages in the mining, preparing, processing,



and marketing of coal and studies of freight rates, labour relations, social relations, etc. They should also include studies of trade balances between Canada and other countries. Correlation of economic considerations of the coal industry with those of other industries should also be undertaken.

### Organization

The Canadian Coal industry has always suffered for lack of organization, and as long as this state continues there cannot be concerted action of mutual benefit to the industry. Closer co-operation between the Dominion and Provincial research organizations and the coal industry should be encouraged.

The Dominion Coal Board may conceivably serve as a co-ordinating body but it will be necessary to have active Liaison committees representing the Dominion and Provincial research institutions and the coal industry to initiate and advise on the program of coal research which should be undertaken in Canada. The personnel of these committees should be intimately associated with the research program. Three committees are recommended for the research program-- one committee for geological and mining problems, one for scientific and technical problems, and one for economic and marketing problems. The findings of the committees should probably be referred to the Dominion Coal Board who could then recommend to the various research organizations how the findings should be implemented. It is suggested, that in general, the Dominion should handle those problems which have country wide significance; the Provinces those which have specific application to their own coals; and the industry problems related to mining and technological developments for the preparation, and processing of coal. Although certain matters, such as health and safety of miners are definitely a Provincial responsibility, it does not necessarily follow that research work might not







better be undertaken by the Dominion as many of the problems apply equally to all the provinces.

It is also recommended that a research information bureau should be an integral part of Canada's coal research program. The duties of such a bureau would be the co-ordination of the results of research from the different laboratories and the condensation and compilation of information pertaining to the coal industry. It should keep the coal operators and the public informed as to the suitability of different coals for use in different types of equipment and also the latest developments in the mining, preparation, processing and burning of coal.

It should be realized that research is costly and that the Dominion and Provincial governments must be prepared to contribute generously toward the research program if the Canadian coal industry is to play its part in Canada's development.

### Conclusion

It has recently been stated " that scientific research, engineering development, and invention are remaking the world at a constantly accelerating rate. No one can know what the future will bring yet it seems certain that coal will occupy an increasingly important and vital place in world economy".

### Resume of the Work of the Research Council of Alberta on Coal

Coal is Alberta's second most important industry, being exceeded only by agriculture. The output in 1947 was over 8 million tons valued at over 36.3 million dollars. There are about 200 operating mines. The estimated Alberta coal reserves based on geological mining data are 46,462 million tons and on the basis of present production these reserves should last about 4000 years.



The government, realizing that sound development of the coal industry would mean much to the province, has devoted a considerable part of its research program to coal. Geological surveys have been made of the more important coal areas. Many thousands of samples of coal taken by Provincial Mines Branch Inspectors have been analysed in the laboratories of the Council and the data thus obtained has provided a good picture of the nature and composition of the coals occurring in the various coal fields of the province. The collection of similar data is continuing and as new mines are opened or old mines extended to new workings the coal will be sampled and analysed. Samples of mine dusts are analysed to determine their explosibility hazard.

In addition to the geological and analytical work many special studies have been made to determine particular physical and chemical characteristics of different ranks of coal. Methods for upgrading the lower rank high moisture coals by carbonization and briquetting and of fine bituminous coals by briquetting have been undertaken. Hydrogenation tests to determine the possibilities of converting coal to liquid fuels and tar acids have been made on a number of typical Alberta coals. The suitability of Alberta coals for use in underfeed and over feed stokers has been investigated. Information is being collected on continuous gasification processes for making from coal a gas suitable for the synthetic production of gasoline and other oils and a high heat value of gas for domestic purposes.

A member of the Research Council was on the International Coal Classification Committee that drew up "The American Standard Testing Materials Specifications" used for classifying coal by rank.

The Research Council of Alberta has published a large number of technical reports and scientific articles on coal. The Council works in



close co-operation with the Chief Inspector of Mines, and maintains a Coal Operators' Research Committee to co-ordinate the research program with the coal industry. In addition, periodic visits are made by members of the Research Council staff to mining areas of the Province.

The Council maintains contact, with the progress in fuel technology elsewhere, by subscribing to the leading technical journals on fuel and allied subjects, and by sending members of its staff to visit government laboratories, research institutions and industrial firms in Canada, the United States and Great Britain.





THE ENGINEERING INSTITUTE OF CANADA  
COMMITTEE ON CONSERVATION of NATURAL RESOURCES

REPORT

on

CONSERVATION IN THE MINERAL INDUSTRY

to the

FIFTH ANNUAL CONFERENCE

of the

PROVINCIAL MINISTERS OF MINES

of

CANADA

Jasper - Alberta

1948

Acknowledgement

The Committee on Conservation of the Engineering Institute of Canada wishes to express its appreciation of the opportunity granted to it to present a report to the Provincial Ministers of Mines in conference, on the important topic of Conservation in the Mineral Industry. It is in whole-hearted agreement with the objectives of the Conference as outlined by the Honorable L. D. Currie, Chairman, and desires to offer its services and to associate itself with the notable work that is being accomplished by these Conferences.



## Organization

The Engineering Institute of Canada's Committee on Conservation of Natural Resources, was organized during the Institute year 1947-48, and is composed of the following personnel;

A. E. Cameron, Halifax, N. S. (Chairman)  
H. W. McKeil, Sackville, N. B.  
Fraser Keith, Montreal, Quebec.  
G. C. Monture, Ottawa, Ontario.  
G. B. Langford, Toronto, Ontario.  
D. M. Stephens, Winnipeg, Manitoba.  
W. G. Worster, Saskatoon, Saskatchewan,  
J. A. Allen, Edmonton, Alberta.  
W. M. Kelley, Vancouver, B. C.

Terms of reference of the Committee are broad, and perhaps may be interpreted as instructions to assist in the important work of management of Natural Resources for the greatest good of the greatest number over the longest period of time. Its personnel is representative of all phases of industrial activity relating to natural resources development, and, as indicated in the above list, at the same time includes members of the Dominion and Provincial government services. All of the members are directly interested in mineral resources development, and in fact, several of them are delegates to this Conference.

## Mineral Resources Development

The Committee is too newly formed to have much to offer at this time in the way of constructive recommendations to this Conference. It has reviewed the submissions made by representatives of the Mineral Industry, to the Conference at Keltic Lodge, last year, and has considered certain published discussions on the general problems of mineral resources management published elsewhere. It would like to express its agreement with, and re-emphasize some of the factors that were discussed in those publications.

Dr. Charles Camsell, in his Presidential address to the Canadian Institute of Mining and Metallurgy, Vancouver, April 1948, re-emphasized the



chief problems with respect to gold mining, when he stated, ....."Perhaps the most significant change in world economics that has vitally affected the future development of our Canadian Mining Economy, is the changed position of gold in world society. Since the dawn of history, the search for gold has been the prime influence in shaping man's destiny. It was gold that sent Iason in search of the golden fleece; it was gold that opened up the Western Hemisphere, beginning with Cortez; it was gold that settled California, Australia, and South Africa. Gold was the main-spring of trade and commerce. The winning of gold is the pioneer industry of our own North Country."

Through all history, mineral wealth, and particularly gold, has been the lure that has opened undeveloped country. The Hinterland of Northern Canada, probably represents the greatest undeveloped, partly habitable area, in the world. It follows that every effort should be made by all governments in Canada to assure to Canada and its Provinces, the maximum returns from the heretofore unexploited resources of that hinterland. The Committee agrees with Dr. Camsell, and other representations made to former meetings of this Conference, that surveys and investigations on the mineral wealth of Canada should be advanced as rapidly as possible. The consumption of our Mineral Assets by the efforts of two Great Wars and paucity of new finds in mineral wealth, are additive in their results and only vigorous efforts will re-establish the security we need.

Although mineral resources development and exploitation frequently represents the pioneering effort in the development of any area, subsequent stabilization of the community that develops about a deposit requires a close co-ordination in the utilization of all the resources of the region. The development and exploitation of a new mineral resource, is





unlike that of any other resource. Whereas the resources of the forests, the soils, and the streams, are reproducible, an ore body, once mined, is gone forever. The mineral industry deals with wasting assets. Stability of the Community can only be assured if the other reproducible resources are developed and exploited in a systematic way. Town-site planning, including the services of water-supply, sanitation, power, etc; transportation, including railroads, highways, and water-ways; land-clearing for agriculture purposes, and development of the forest resources, are the factors which will determine the continuity of the community after the ore deposit has been depleted.

The economics of a mineral deposit, at least during the early stages of its development, tends to be in opposition to the principles of conservation. The economics of mining always tends towards the immediate extraction of the near surface and richer portions of the deposit because cost of recovery must be met from values recovered. Ores too lean for profitable mining must be left under ground. In many cases, when so left, they are not recoverable later. Many deposits carry more than one valuable mineral, but only one is the original purpose for development. With time, improvements in recovery or changes in market conditions may permit of the re-working of material formerly considered worthless. The tailings dumps of one day are likely to be an ore dump of the future.

The simplest of conservation principles requires care in the selection of suitable mining methods that will permit a re-entry to abandoned ground, care in the selection of suitable disposal sites for storage of what are, perhaps temporary wastes and care in the selection of town sites to guard against possible contamination of water supply by industrial effluents and atmospheric pollution by industrial fumes. These are factors that require early consideration in the development of an industry and the community that will ultimately surround it.



Proper management of resources on a regional basis, makes it necessary to examine the inter-relationships which exist between various resources, such as soils, climate, vegetative cover, mineral content, power, people, transportation and the relationship of any or all of these to similar factors in any other contiguous or related regions. Obviously, this principle requires regional inventories of resources. These inventories can only be obtained through systematic air-photography, and the preparation of base maps, followed by ground control surveys, and investigations as to quantity, quality, and distribution.

Each region will have a dominant resource and this will indicate the general direction of economic development for that region, and should also indicate the extent to which other resources of the region can be employed. If the dominant resource should be arable land for agriculture, this may indicate one sort of use for streams, wooded areas, grazing areas, ground water, and areas with recreation potential. If the dominant resource should be forestry, this may indicate some use for smaller pockets of agricultural land, and entirely different uses for streams, etc. The mineral resources are often the dominant resources in the early stages of development of a given region. If they prove to be the long range dominant resource, then the other resources of the region, soils, forests, streams, etc., take on added value as a source of supply for the communities surrounding the mineral industry.

In general, it can be said that the management of the resources of a region should be designed so that employment in any region is as continuous and uniform as possible. The integration of employment throughout the year and timed to pick up seasonal employment slack requires intensive study and organization particularly where a mineral resource is nearing depletion, or is itself seasonal in operation.



The Committee realizes that their suggestions and thoughts are placing a heavier burden and greater responsibility upon governments. For the most part, the natural resources are the property of the crown and mapping, supervision of planning, inspection of operations and a measure of control are necessary to assure that the economics of the immediate present do not override the factors of conservation for future use.

Respectfully submitted on behalf of the Committee.

Alan E. Cameron,  
Chairman.

AEC:gw





## WESTERN QUEBEC MINING ASSOCIATION

Notes and comments on proposed agenda for the fifth Annual Provincial Mine Ministers of Mines Conference to be held in Jasper, Alberta - September 2-4, 1948.

---

### I. Sub-Committee on Exploration and Development of Mineral Resources.

- (a) Aerial Photography and Topographic Mapping.
- (b) Geological Surveys - Reports, Maps, etc.

Regarding either of these questions, this Association has nothing to add to suggestions made in previous years, as follows:

"This Association favours the formation of an inter-departmental committee between the various departments concerned of the Provincial Government. This committee would decide what areas are most important from the point of view of the Province as a whole. Having settled the priority areas, the committee could then approach the Dominion Government with a view to having these areas photographed and mapped. In doing so, they would speak for the Province as a whole. This system would also tend to stop any overlapping of efforts between the Dominion Government and the Provinces and also between Departments of the Provincial Government."

With further reference to the above, may we add that this Association agrees with the recommendations of the Toronto Meeting, November 1945, of the Mine Ministers' Conference, as well as with the findings of the 3rd and the 4th Conferences, held respectively in September 1946 and September 1947.

- (c) Acquisition of minerals lands and assessment work.

As credit is now being given in the Province of Quebec for geophysical surveys, we feel, inasmuch as we are concerned, there is no need for discussion under this heading at this Conference.

- (d) Mining Taxes and Mining Royalties.

#### (i) Depletion

In view of the fact that section 11 of Bill 338 (an Act respecting Income Taxes) provides for the continuance of the established method of computing depletion allowance in mines for Income Tax purposes, our suggestion would be that the matter of depletion should be no further discussed at the Mine Ministers Conference, at least for the time being.



(ii) P.C. 331 - Regulations governing allowable deductions re Mining or Logging Operations.

The above regulations have been passed pursuant to paragraph (W) of Subsection (1) of Section 5 of the Income War Tax Act, under the authority of which a taxpayer, in computing his income, may deduct such amount as the Governor in Council may, by regulation allow for amounts paid in respect of taxes imposed on the income by the Government of a Province by way of tax on income derived from mining operations.

We are not reconciled with the definition of "Income derived from Mining Operations" as appearing at section 3 (b) of P.C. 331. In fact, we consider it discriminatory to the mines of Quebec in that it deprives those mines of a part of the tax relief provided under section 5 (w) of the Act.

On the other part, the mining industry of some of the other provinces seems to agree with the above mentioned definition, whereas other provinces have amended their Mining Tax Act to meet the provisions of the Regulations.

In view of the above, and until we definitely know how the regulations apply to the taxes paid under Division III of the Quebec Mining Act, we believe it would be premature to bring up P.C. 331 for discussion at the Mine Ministers' Conference.

However, if necessary, we would like to reaffirm our contention which we have already expressed, that we cannot accept a definition of "Income derived from Mining Operations" implying, directly or indirectly, that only a certain proportion of the Quebec duties upon mines, as at present levied, is accepted by the Government of Canada as an exemption or deduction, under Section 5, subsection 1, paragraph (W) of the Income War Tax Act".

(e) Transportation - Roads - Air Transport.

Respecting construction of mine roads, we are pleased to acknowledge the vision and aggressiveness shown by the Department of Mines of the Province of Quebec in constructing, from 1925 to August 1948, a total of 1192.86 miles of mine roads. The cost of these works which amounts to \$8,195,183. has been shared as follows:

The Province	\$ 6,928,580
The Dominion	1,130,172
The mining companies	136,431

We take advantage of this opportunity to extend to both governments our appreciation and thanks for their contribution to the development of new mining districts.



## II. Sub-Committee on Fuel and Power.

No comments on this part of the Agenda.

## III. Sub-Committee on Metallic Minerals.

### (a) Prospecting, staking and proving regulations.

Same remarks apply here as for item I (c) of the Agenda, i.e. "Acquisition of mineral lands and assessment work."

### (b) Co-ordination of the Metal Mining Regulations.

(i) With reference to co-ordination, we believe it advisable to reaffirm our opposition to the idea of certification of any class of labour.

(ii) Regarding the Canadian Electrical Code as submitted by the Canadian Standards Association and especially respecting rules as outlined in Part V of the Code, we wish to offer the following general comments:

1. The proposed code has been drawn up with great care and thoroughness in an attempt to provide for all contingencies. It has been so carefully and thoroughly drawn up that it presents a mass of detail which, in our opinion, is too complete. This thorough coverage of the subject with rules is going to make the code extremely difficult to follow and more difficult to enforce.

2. If the rules of the code are followed, the cost of construction for new mining and milling plants will be greatly increased. The above is particularly true of small plants. Mining is a financially hazardous business and yet many of the larger mines now operating started off on the proverbial shoe string. For the small, poorly financed venture the suggested code will work a real hardship if the rules have to be adhered to the letter.

3. We believe the code as submitted goes beyond its scope. In our opinion the code should concern itself with rules to govern the proper and safe installation of cables and equipment but should not presume to make rules regarding maintenance and operation.

In view of the above comments, we suggest that this Association would appreciate being advised before the Department of Mines of Quebec accepts the code as submitted in Part V. We also suggest that a rider should be attached to whatever rules are finally accepted by the Department to the effect that the enforcement of the rules of the code shall be at the discretion of the electrical inspector.





(c) Conservation of mineral Resources.

With reference to the above we take the liberty of offering the following comments:

The Association feels that conservation is highly desirable and especially in certain instances whereby products which are not economic at the present time could be stored for the future when they might become an asset to the country. However, any tendency to dictate to a company what it should or should not mine or any interference with the ordinary laws of economics in any mining operation should be very carefully considered before the Association expresses any opinion as to its advisability.

(d) Research and development program for Metal Mining Industry.

In discussion of this item, this Association suggests to bear in mind the facilities already existing in Quebec and at the Mining School in Val d'Or. We are of the opinion that there is no need at the present time for additional research laboratories.

The Association feels that the present staff of Provincial Geologists should be made adequate in order to keep up to date records of exploratory works and diamond drilling as well as insure, before a mine is closed down or abandoned, that permanent records of underground workings and geology be secured and kept available for future work that may be done. It is further suggested that all cores on surface drilling be saved for a reasonable period in order that the Provincial geologist may examine them.

IV. Sub-Committee on General Topics related to the Mining Industry.

(a) Mining Townsites, Municipalities and Housing.

No comments except that the application of the Quebec Act respecting the municipal organization of minery villages has worked satisfactorily.

(b) Workmen's Compensation.

(i) We are inclined to believe there is no necessity to bring up at the Mine Ministers' Conference the reaffirmation of the principle of maintaining Workmen's Compensation Funds actuarially sound. Inasmuch as we are concerned, we have no complaint to offer.

(ii) Respecting the matter of accident compensation to mine rescue when in service in other provinces, we are informed that this matter has been placed on the agenda of a Conference of all the Workmen's Compensation Commission in Canada which is being held in Quebec, commencing September 1st.



(c) Health and Safety regulations.

No comments.

(d) Education - Universities, Technical Schools and Apprenticeships.

Again, we desire to reaffirm our opposition to the certification of any kind of labour.

(e) Securities regulations.

This Association feels that the matter of securities regulation is not a subject on which we care to make any comments.

(f) Labour Codes.

With reference to the above, may we state that the policy of this Association is still in conformity with the following:

At the end of 1946, news received that the Dominion Government would at the next session of Parliament, adopt a new Industrial Relations and Disputes Investigation Act by including the substantive provisions of P.C. 1003 and P.C. 4020.

The Association did not concur with the opinion expressed in another province that the metal mining industry could operate with greater stability under the authority of a National Labour Code.

At a special general meeting, held on February 21st, 1947, the members of this Association have unanimously adopted a resolution expressing their belief that all jurisdiction in labour matters in the mining industry normally fall to the provinces and making known their desire that all jurisdiction in labour matters in the metal mining industry of the province assumed by the Dominion during the war, be returned to the Province.

Copies of the resolution were sent to the Honourable the Minister of Labour for the Dominion, to the Honourable Prime Minister and the Honourable the Minister of Labour of the Province.

Jurisdiction in labour matters in the mining industry was re-assumed by the Quebec Department of Labour on April 1st 1947. We do not see the necessity nor the advisability of a change.

Conclusion:

All of the above is respectfully submitted with the purpose of facilitating discussion of the problems listed on the proposed agenda.

Quebec, August 23rd 1948.

Western Quebec Mining Association  
(Sgd.) Eugene Larochelle, Secretary.



Topics to be Discussed by Mr. P. Streeter  
at Plenary Session on Coal

- (1) Increase of depletion allowances from present 10 cent ton level.
- (2) Importation of strip and underground mining equipment, and parts thereof on duty free basis when class or kind not made in Canada.
- (3) Consideration of coal freight rate structure with reference to per car mile revenue from various producing areas realizing probable necessity of blanket rates applicable to defined coal shipping areas but not otherwise.
- (4) Problems that arise during plenary sessions.





SUBMISSION

of

THE WESTERN CANADA BITUMINOUS COAL OPERATORS' ASSOCIATION

to the

FIFTH ANNUAL CONFERENCE

of the

PROVINCIAL MINISTERS OF MINES

of

CANADA

Jasper Park, Alberta

September 2 - 3 - 4, 1948



The Western Canada Bituminous Coal Operators' Association welcomes the opportunity of presenting to this Fifth Annual Ministers of Mines Conference its views dealing with the problems of the industry and its recommendations to the Ministers as to ways and means by which the industry might be assisted in these problems to the benefit, not only of itself, but to Canada as a whole.

We also appreciate the privilege of participating in the deliberations of the Conference, whose purpose is the exchange of ideas aimed at the coordination of the thought and action, not only of those charged with the administration of the legislation under which the development of the mineral resources of Canada is carried out, but of those actively engaged in the industry. This exchange in ideas and coordination of thought and planning cannot help but be beneficial to all concerned and must undoubtedly make a considerable contribution to the development of the industry.

#### THE ALBERTA COAL INDUSTRY

Never in the history of the industry has there been such an insistent and prolonged demand for coal as there is today and furthermore, there is every indication that this demand may continue for some time. Some of the demands are new, such as export coal for Japan and China, but in addition, the requirements for railroad and industrial fuel are at an all time high.

With the coming of World War II there developed a rapidly increasing demand for coal which still exists and the Coal Producers of the West have largely kept pace with this demand, probably to a greater extent than in the case of any other major industry. But because of its constant availability, an adequate supply of coal to meet public requirements has been accepted as a matter of course, and the public generally has not fully appreciated the importance of the industry to the economy of the province and to Canada as a whole.



Prior to the war, Alberta coal production averaged slightly over 5,000,000 tons per annum. Production has now been stepped up to over 8,000,000 tons so that in 1947 coal to the value of more than \$36,000,000 f.o.b. the mine was produced, being second only to agriculture in the value of its production in this province.

Coal is not a newcomer to the economy of the province but has a history of some 62 years duration. During this period from small beginnings it has shown a steady and continuing growth, so that some 288,000,000 tons of coal valued at more than \$725,000,000 at the pit-head have been produced.

The coal industry has probably been the most maligned and misunderstood of all major industries. It has generally received a poor press, has been considered a sick industry and the public generally has been critical of both management and labour. The result has been that, down through the years, the public has acquired certain impressions and prejudices, some which were never factual and some while perhaps true yesterday are not true today.

Regardless of this, because of its almost unlimited reserves as compared with other fuel sources, the fact remains that coal will continue as the basic ingredient in our industrial economy and indispensable to our present day civilization.

We have already pointed out that coal mining is second only to agriculture in money value to the province. In addition, it pays the highest average wage of any industry in Canada. It has to a great degree mechanized its operations; has improved its safety record to the point where three times as much coal is produced per fatality than was the case 30 years ago; and its workmen are probably better fed, better clothed and perhaps better housed than the great majority of workmen in comparable industry today. At the same time, it has kept the people warm, supplied the requirements of industry and provided the great bulk of the energy required for the motive power of our transportation systems.





Since labour accounts for 65% or more of the cost of production, it follows that for every dollar's worth of production, coal provides more in the way of employment than any other major industry, and in addition, makes possible a vast superstructure of other industries so essential to our present day civilization.

In the case of the railroads, approximately 32% of the total production is consumed in transportation, and conversely coal is one of their largest single categories of freight, providing as it does a large back log of traffic volume which enables other freight to be carried at a lesser cost than otherwise; a factor which affects the living cost of every single citizen of this country.

The problems of the Western Coal Industry are fundamental and generally of long standing. These are, principally, markets, transportation, and in recent years, labour supply.

The market and transportation problems are completely inter-related and are, of course, largely due to the relatively sparse population close to the mines, as well as to the competition of other fuels.

The natural market area for Alberta coals, in which no subvention assistance is required, extends from just west of Winnipeg on the east to the Pacific Coast on the west. On the eastern border of this area our coal comes into competition with imported fuel; in Alberta with natural gas, where already 1,000,000 tons of coal are displaced annually; and on the Pacific Coast with fuel oil, wood and sawdust.

The market for coal in the Prairie Provinces follows closely the level of business activity which in turn is very largely dependent on the value of the wheat crop, a circumstance which in prewar years resulted in considerable fluctuation in demand in accordance with crop cycles.

It appears, therefore, that to provide the steady and increasing markets so necessary for the orderly and progressive development of the industry, it is essential that the use of Alberta coal be further extended



into Western and Northern Ontario. To accomplish this, it is necessary that the net transportation costs on coal be as low as possible and that the subvention policy be stabilized and adjusted as required, to the long term needs in moving Western coal in increasing quantities into new territory.

The question of subvention policy has been much debated and while we realize that for many years at least it will be impossible for Canadian coal to supply completely the country's needs and that a substantial portion of its requirements must come from the United States, we believe that an extended and enlarged subvention policy is fully justified in the interests of the Canadian economy as a whole.

### Labour

Due to the high level of business activity, there exists an inadequate supply of labour for basic industry in Canada and the present scarcity of materials and their present high price is directly attributable to this situation. Regardless of high wage scales, so long as other work is available, basic industry, particularly in the more isolated communities, is not attractive to labour.

This, together with the institution of the five day week, has resulted in the curtailment of coal production.

As it does not seem desirable that the Prairie Provinces should be forever tied to an almost purely agricultural economy, we believe that the great need for our Western country is increased population and consequent increased industrialization. Accordingly we feel that government should take active steps to provide an adequate supply of basic labour, not only for the coal industry but all basic industry through immigration, particularly of displaced persons from Central Europe.

In the period from 1920 to 1929, the Alberta coal industry employed slightly over 9,000 men who produced approximately 650 tons per man per year. Today the industry employs about 8,000 men who produce



1,000 tons per man per annum. These figures in themselves demonstrate the increase in efficiency and the increased productivity of the mines under steady operation. However, were the same labour force available today as in the 1920's, there would have resulted a further increase in production of 1,000,000 tons per annum.

Our underground labour force is growing older and decreasing in numbers year by year, and unless increased, strip mining which now accounts for 23% of the total coal produced and further mechanization can only offset the decrease in underground coal production.

### Financial Aspects

The physical results of mechanization to date have been encouraging and have tended to reduce the cost of production. On the other hand, the financial benefits have been largely dissipated in increased wages to the mine workers rather than in dividing them among the public, the mine workers and the mine owners. As a result, mechanization has not improved the net financial position of the industry to any appreciable extent.

A further problem is that mines do not last forever and must be replaced as they become exhausted. At the present time it costs fully twice as much as it did 10 years ago to develop a mine with modern equipment for the mining, cleaning and sizing of coal.

It seems then that in order to maintain production and to develop the facilities necessary for this, the industry must be able to sell its product on a competitive basis with imported fuels and other sources of energy in such volume and at a price that will provide a sufficient profit to attract capital. At the same time, it must set up sufficient reserves to depreciate fully the original cost of mines now being worked out and to have sufficient money in the bank to replace them as they become exhausted.

While the profit position of the industry has shown some improvement since the lifting of price controls, the net return to the industry over the war years and for a long period previously has been inadequate, averaging







2.03% on the capital stock and 2.05% on the capital employed.

It follows then that a larger net return per ton produced and an expanded, assured and less fluctuating market is required if the industry is to continue in a healthy and expanding condition.

### The Future of Coal

A succession of scientific discoveries and technical developments in recent years clearly marks the trend toward the ultimate conversion of much of the world's coal reserves into gas and liquid fuels. This perhaps will not become an actuality in the immediate future but because of the relatively large reserves of coal and the comparative scarcity of known reserves of other sources of energy, one must reach the inescapable conclusion that in future coal must largely supply the energy requirements of the world. The cost of energy from any fuel source is bound to rise and the gas and liquid fuel of the future will be made from coal regardless of cost, which cost will probably be only slightly higher than at present. The complete conversion of coal to gas and liquid fuels and to chemicals, means the establishment of whole new major industries, and will have a direct bearing on the nation's future energy supply, on employment, on transportation and on the centres of gravity of industry.

We believe then that the industry, while already making an extremely important contribution to the economy of the country, must eventually become the primary source of energy for industrial and home heating needs and is worthy of the utmost encouragement by government.

### Recommendations

The industry is not asking for assistance by way of handouts but only insofar as the assistance rendered can be justified as being in the best interests of the country as a whole.

Specifically we make the following recommendations to the Ministers with the view to an orderly, increasing and profitable development of the industry.



- (1) The continued dependence on foreign supply for so great a proportion of the fuel requirements of Canada, is undesirable both in peace and in war. An increasing and profitable Canadian Coal industry would not only improve the foreign exchange position but would provide for an expanding and increasing Canadian economy. It would increase purchasing power, not only for those directly employed in industry but for every Canadian citizen. It would also provide employment for more Canadian citizens as well as having a stabilizing and deterrent effect on the rising price of imported fuels.

To accomplish this objective, a wider and less fluctuating market is needed. This requires the extension of markets into Western and Northern Ontario, minimum net transportation costs, a long term subvention policy flexible to the needs of the industry and the co-operation of government in the use of coal in all public projects and buildings where possible. Favorable and sympathetic publicity stressing what coal means to the economy of the country as a whole is required.

## 2. Legislation and Taxation

We have pointed out the small net return to the industry and the necessity of improvement in this direction. We suggest that in the matter of taxation, government policy should be such that it takes into account its ultimate effect on the wellbeing and competitive position of the industry.

Regulation should be realistic and place no artificial barriers in the path of efficient and increased production, and contemplated legislation, particularly that which is social in character, should be appraised on the basis of its value to the people as a whole rather than to provide benefits for pressure groups, relatively small but highly vocal, at the expense of the population generally.



(3) Labour Supply

The present inflationary spiral is due to a lack of production caused by an artificial shortage of labour. This is the result of organized pressure groups having forced industry to provide them with the same or an increased standard of living and a greater share of production in return for a lesser number of hours worked and consequently less goods and services turned out. Increased production to the extent required can only come as the result of more man hours worked, particularly in basic industry. We submit that a well planned and realistic immigration policy is the answer to this problem and recommend that government take immediate steps to implement such policy.

- (4) We have no quarrel with the oil or gas industry but only the greatest respect and admiration for the splendid manner in which they have done and are doing their jobs. Neither gas nor oil can displace coal except under certain circumstances, and vice versa. Our thought in this connection is, that in view of the relative scarcity of known reserves of petroleum and natural gas as compared with coal, they being specialized forms of energy, should be conserved for those uses for which solid fuel is unsuitable.

(5) Testing Laboratory for Flameproof  
Underground Equipment

From time to time the coal industry has advocated the establishment of a testing laboratory for flameproof underground equipment by The National Research Council. At this date we have had no official announcement that the government contemplates such action.

The lack of a laboratory of this kind has been a deterrent to the fullest use of mechanized equipment underground and has necessitated the importation of machinery at greater cost accompanied by longer delays in the matter of deliveries. The facilities for the manufacture of such equipment are already in existence and in some







instances little change would be required in existing types of equipment to obtain certification, while in other cases only the approval plate is lacking.

(6) Research

Research with regard to the chemical and physical properties of coal, its processing and utilization has been carried on by the Bureau of Mines at Ottawa and the various Provincial Research Councils for a long period of time. We believe that the importance of the industry requires that present programs be expanded and accelerated, both in the matter of pure and applied research. We are appreciative of the work that has been accomplished but believe that a closer liason as between the various research bodies is desirable and that a wider dissemination of the information obtained would be of much value to the industry and to the coal using public. While it is presently possible to obtain information as to specific projects on request, interested parties have far too little knowledge of the work that is being and has been carried out. As a result, much valuable information has not been made available to those who could have used it in a profitable manner. We suggest therefore that some scheme be worked out whereby the results obtained by these bodies can become known and made available by means of a bulletin published at suitable and regular intervals.

As to the specific needs of the western industry in the matter of research: Because of the transportation problems involved it is highly necessary that coal be upgraded where possible as to B.T.U. content and storage qualities. This points to extended investigations in regard to washing and sizing and particularly to briquetting and upgrading of high moisture fuels. Considerable work has been done in these latter fields but the research bodies have been handicapped by insufficient appropriations and modern facilities to carry on these very necessary investigations.

An evaluation of the world's known fuel resources clearly



indicates the trend toward the ultimate conversion of a large portion of the world's coal resources into liquid fuel and gas. A study of the Report of the Wallace Committee clearly indicates the difficulties involved in making a decision as to how best the research in the conversion of coal to gas and liquid fuels might be conducted. We understand that a further report of this committee, or one along similar lines, is to be forthcoming in the near future, which we hope will point the way in this regard.

A few years ago the known oil reserves of the Prairie Provinces were declining to the point where steps in the matter of the manufacture of liquid fuel from natural gas were imminent. Today that picture has changed and the economic possibility of the manufacture of liquid fuels has been pushed back into the indefinite future. Nevertheless, with huge reserves of coal in Western provinces suitable for conversion processes, it would seem the prudent course that the research work prerequisite to their utilization should not be allowed to lapse but should be carried on against the day when this will be required.

We would suggest therefore that while it may not be within the financial resources of the government to carry on experimentation and research on the scale that is the case in the United States, the closest possible liason should be kept with research bodies south of the border. At the same time Canadian Research Organizations should be provided with sufficient funds to carry on parallel and complementary investigations which would fit the particular requirements of Western coals.

Respectfully submitted

on behalf of

THE WESTERN CANADA BITUMINOUS  
COAL OPERATORS' ASSOCIATION

Per: W. Whittaker.



## THE GREATNESS OF COAL

by V. A. Cooney, B.A., LL.B.

Executive Secretary and Treasurer

DOMESTIC COAL OPERATORS' ASSOCIATION OF WESTERN CANADA

It is highly commendable that the Ministers responsible for the development of mining in each Province appreciate as they do the advisability of convening annually to compare notes and to inform one another. The inclusion in such a convention of their executive staffs cannot but increase the value of the effort made.

The characteristic of this meeting however, most indicative of co-operation and practical co-ordination, is the inclusion of representatives of those who are directly engaged in mining as an industry. The liaison so established is one of the most important single contributions which could be made to the development of mining. The operators of mines in Alberta producing domestic coal appreciate very much the invitation to be represented at this conference and value the privilege of participation in its work.

Canadians have been slower than others to understand the potential value of coal deposits. The history of coal in this country has been that of a problem-child and its significance to the nation has always been lost in a cloud of complexities. Three years ago a Royal Commission gathered extensive data. The principal contributions made by its report were that it provided statistics, valuable information and economic history in one co-ordinated document and advocated establishment of a Dominion Coal Board.

The fact of the Royal Commission's existence engendered thought by people, governments, industries and mines. During the past two years the tempo of that thought has increased to such an extent that today Canadians, their governments and the industry itself are more keenly aware of the greatness of coal and its potentialities.

The coal industry's history as a problem-child is being forgotten in the growing realization of what coal has done and what it can do. It is as if we had all been blind and now see.

The coal industry produces an essential commodity. One half of the energy provided by water power and mineral fuels to power the wheels of industry in Canada today and to generate heat and comfort for Canadian homes is produced from coal.

What is more we have lots of it -- 16 percent approximately of the known potential supply of a world which emphasizes the prime importance of coal.

We are producing comparatively little coal and yet the industry creates millions of dollars in new money every month. In 1946 it created revenue to strengthen our country's foreign exchange







position to the extent of 70 million dollars. Moreover, we know that it can produce this value and more every year.

From sixty-five to seventy cents out of every dollar of production cost in the coal industry is paid to its twenty-five thousand workmen and their families and its wages are amongst the highest in Canada.

These are some of the facts about which Canadians and their governments are now thinking. The coal industry is no longer considered to be a problem-child. More and more in a rising tide of interest, Canadians are commencing to realize that the coal industry is not one to be patched up, but one which deserves for its substantive value the utmost support in developing itself to its full stature where it will be in a position to play an increasingly important role in national and provincial economics and provide greater guarantee of security for all in time of national need.

The people of every Province are becoming more and more interested. They know that aside from its revenue-creating value to five Provinces, coal is essential for consumption in nine. The realization is growing that revenue created in Alberta is indirect revenue for the other Provinces. Not only does every dollar created in one Province directly benefit the foreign exchange position of each one of the others, but it enables the people of the producing Province to buy the goods and merchandize from each of the others.

Therefore, where not long ago, Provinces were content by custom to import fifty percent or more of all the coal used in Canada, today they are beginning to think differently.

On more than one occasion this country's dependence on outside sources for coal has caused concern. Can we take for granted that fifty percent of our coal requirements will always be available from outside? During peacetime, importation of such a vast quantity of coal, year after year, gnaws away at our foreign exchange position; and during wartime particularly, will we always be dependent on other nations for fifty percent or more of the coal necessary to meet our energy requirements? It is not suggested that Canadian coal can at once supplant the amount imported but it is possible to reduce the extent of our dependency by taking steps which will encourage development of the industry.

In the belief that the Ministers of Mines would want to know what the domestic section of the industry considers might be done by the Provinces to keep abreast of present encouraging trends and to foster the increasing interest in Canadian coal, we respectfully make the following specific suggestions for their study and consideration.



## 1. Exploration

Geological ability is today capable of considerable accuracy in estimating coal reserves by systematic drilling programs. Institution of such programs would have a most beneficial effect towards sound development.

The mining industry merits governmental support in this regard for the value of such action in encouraging capital investment for development and stability of labour supply. Mines and mining communities will build themselves on more sound and lasting foundations when they have the most accurate picture obtainable of coal reserves. It is to the benefit of the Province as a whole that the extent of such security be ascertainable.

If this matter be considered to be a federal responsibility it is still of such import to the Provinces that it merits the taking of every possible step by the Provinces to influence the carrying out of the responsibility.

## 2. Research

The full eventual development of an asset so important to the welfare of this country will depend in the matter of time, on the speed with which research bodies co-ordinate their efforts and the intensity of their work.

Valuable contributions are being made by the Bureau of Mines in Ottawa and by Provincial Research Councils. There is great interest throughout the world in hydrogenation processes for the economic manufacture of liquid fuel from coal.

Whilst it is not suggested that research in this country can be carried on in this development to the extent of the financial investment be made for example, in the United States, yet no pilot plant exists in Western Canada where widely varying types of coal exist, one or more of which may be found to be particularly adaptable.

It is suggested too that this conference endeavour to influence the establishment of a sub-committee representative of federal research, Provincial research Councils, mine operators and organizations such as the Stoker Institute, for synchronization of all research in coal, in order that the results of the co-ordinated effort may be published by the Dominion Coal Board.

## 3. Bureau of Mines Testing Station

Mines Departments are asked to approve all equipment for underground use but because Canada does not possess a testing station, they are dependent for guidance with respect to the safety of the equipment, on the United States Bureau of Mines' approval of permissible mining equipment or British Government Flame Proof approval.



One of the reasons why a large percentage of underground machinery is manufactured outside of Canada is that the United States Bureau will for example, only approve electrical equipment when it is attached to the mechanical equipment it is designed to drive.

The establishment of a properly equipped testing station in Canada would have two very beneficial results:-

- (1) It would encourage the manufacture of flame proof equipment in Canada by subsidiary outlets of large British and American companies. Such manufacture in Canada would also tend to produce equipment particularly adaptable to Canadian mining conditions.
- (2) Mining companies, engineers and electricians would be given greater incentive to design equipment.

For the benefit of Canadian coal mining development, it is suggested that the Provinces endeavour to influence the establishment through the Dominion Coal Board of a testing bureau as a branch of the Bureau of Mines, employing thoroughly trained engineers with the best available scientific equipment which would be capable of performing the dual function of testing all proposed mining equipment and have the power of approving equipment found to be satisfactory for use in Canadian mines.

#### 4. Legislation and Regulations and Taxation

We have indicated the present and potential greatness of the industry. If the industry can be as valuable to the people as we think, every proposal of Provincial Legislature which affects coal should be carefully appraised before enactment to ensure:

- (a) that the legislation will not prejudice the ability of the industry to maintain its service and develop its value to the people.
- (b) a sufficient return on capital investment under normal operating conditions, thus encouraging risk capital to the Province and encouraging the ingenuity and enterprise which creates industries.
- (c) as little interference as possible in employer-employee relationships normally for determination by agreement between the parties. Proper protection for the workmen and proper protection of the industry include acceptance by labour of its responsibilities to the industry and to the people.





The industry urges continuation of the effort already being made towards uniformity of legislation as between all Provinces -- uniform mining regulations, uniform Workmen's Compensation Acts, uniform taxation laws and uniform leasing requirements.

In addition to other values of greater standarization there is particular need for uniformity in some of these matters to offset the dangerous tendency whereby effort is made to subject Provincial Governments to pressure for excessive concessions and because of lack of uniformity the legislation of one Province is played against that of another.

If the industry is to maintain its service to the people and be allowed financially to plan its orderly progress and development, taxation policies must insure against over-taxation in any Province. Interprovincial uniformity in this matter is highly commendable. To tax any one industry beyond its ability to pay and leave nothing for development or improvement or too little for return on capital is to invite disaster to the services which the industry performs.

Under the heading of uniformity, emphasis should be placed on the value of similar qualification requirements for workmen in the same industry. Young men would be more encouraged to enter into mining if they had assurance that qualifications as miners would be recognized in another Province. Men with qualifications in other countries would also be more interested in coming to Canada.

Standard mining regulations achieved by pooling provincial experience will also induce greater interest of machinery manufacturing companies in the possible manufacture of equipment in Canada. The Royal Commission on coal advocated increased mechanization for the major domestic fields and in some cases indicated that experimentation towards increased mechanization was essential to their future economy. The duty on mining machinery has not been such as to encourage experimentation in mechanization. It was estimated that during the war the cost of mining machinery to Canadian mines was fifty percent higher than to United States mines.

We submit also in this matter of financial economy that effort be made to enable the mines to retain a substantial portion of their revenue in good years to protect against inability to set aside monies for progress in lean years; and that it be recommended that substantial portions of monies paid at present by the industry as royalties, assessments or as taxes be reinvested in the industry directly to assist development.

Canada's coal has a present greatness and a future greatness. The secret of the latter lies in market stabilization. The sooner the year round demand for coal or its products becomes constant, the sooner will its future greatness become a reality. Financial progress, development of experimentation and mechanization, improvement of the product and availability are matters which are in the hands of the people of each Province. The Canadian coal industry will develop in direct proportion to the demand of the people them-



selves for it. Their insistent demand would influence solution of problems of both production and distribution. The necessary demand can be created by those who have the best opportunity to study the industry and foresee the valuable results to be attained -- the federal and provincial governing representatives.



BRIEF ON THE COAL INDUSTRY - By John Crawford

Our world of today is passing through a period of stress the like of which has never before been known. Nations are in a state of flux and upheaval, understanding among peoples has reached a new low, the net result being that no one knows what the morrow will bring forth. In view of this deplorable condition it is therefore very necessary that all friendly and peace loving peoples draw together and evaluate their resources with a view to the protection of their collective freedoms and way of life.

As technical experts from all parts of this great Dominion it is our duty to assist to the utmost in placing our Country in a state of preparedness to meet any or all eventualities. It is well known that our surface resources are in a high state of efficiency and able to carry any reasonable load placed upon them. Our task therefore as Engineers and Technicians is to see to it that our sub-surface resources are placed in a comparable position and in a constant state of readiness. To attain this desirable end it is necessary that all our efforts be co-ordinated. The present day economy of every Country in the world, be it large or small, is based upon power efficiently applied. In Canada our potential power reserves are so great they stagger the imagination. To properly evaluate the true significance of our vast energy potential it is necessary we have expert information by Research Bodies, Departments of Mines and Minerals, Geology, Chemistry, etc., etc., this then requires co-ordinated effort by all and so that there will be no overlapping, all functions should be geared in proper relationship to the main objective, i.e. productive effort in the highest state of efficiency.





## SOME FACTORS THAT HAVE A DEFINITE BEARING ON INCREASED COAL PRODUCTION

(1) It is necessary that a continuous and plentiful supply of Labour be available under all classifications. It is not enough that our labour supply be sufficient as to quantity, we have now reached a point where the labour supply must be sufficient as to quality as well. A large percentage of men entering the mines must be trained Technicians, capable of handling the Mechanized Equipment now used in and around the mines, from the face to the Railroad Car. As a result of this the matter of education must play a much greater part in the future than has been required in the past. We must therefore see that the necessary educational facilities are provided at all times, with a view to having our young men entering the mines fully qualified to carry on the Technical requirements demanded in this machine age.

(2) Our mines today must be fully mechanized if they are to continue to function as efficient economic units and no obstacles must be placed in the way of this progressive trend. Coal must be mined and loaded by power equipment, the blasting of coal from the face must be accomplished by the safest and most efficient methods, which means the introduction of substitute processes in the breaking of coal at the working face as compared with the present explosive methods. Then in the matter of transporting coal from the loading points in the mine to dumping points at the preparation plants, it is necessary that all manual and horse haulage be discontinued, and systems of haulage introduced employing Rope, Storage Battery, Trolley and Diesel Power, this means heavier track steel, roadways of greater height and width,



systematic methods of Entry timbering with a view to long life of supports ( preferably steel supports ) which offer less resistance to ventilating currents.

(3) Mechanized production dictates the method to be put into effect in working the coal seam, 1. Centralized extraction, preferably panel system. 2. Centralized system of haulage. 3. Centralized ventilating system and centralized supervision. The foregoing allows large outputs to be recovered from a given area with small loss, and owing to the centralization of all functions, a greater measure of safety is afforded the workmen.

In the cleaning and sizing of coal for the market great care must be exercised to avoid breakage, this then requires a type of plant composed of a system of continuous conveyor belts, the whole being of ample capacity to take care of peak overloads.

A careful survey of consuming areas must be made and such areas then zoned in accordance with distance from point of production, type of coal, physical and chemical characteristics of same, and with particular regard as to size.

In Alberta we have an Act respecting the sale of coal known as " The Coal Sales Act, 1925 ". This Act requires the Operator of every coal mine in Alberta to register a trade name for the coal mined. The name is registered in the Office of the Chief Inspector of Mines, and all coal shall be both sold and shipped thereunder, and no coal produced in Alberta shall be advertised or sold except under its registered Trade Name.

Every invoice and shipping bill relating to shipments of Alberta.



coal must give the following particulars:-

(a) The name and Post Office address of the mine from which the coal was produced, and the registered Trade Name of the coal.

(b) The coal area in which the mine is situated.

(c) The size of the coal.

The requirements of the Act are enforced within the Province of Alberta, however it is quite obvious that the jurisdiction of the Government in this regard extends only to the Provincial boundary and what takes place between the Provincial boundary and the Consumers bin in Eastern Canada is debatable. It would appear that the proper procedure would be for the Federal authorities to require that the Trade Name and particulars under this Act follow the shipment from the mines to the consumers bin. In this way complaints re shipments could be traced to their source very quickly and matters of dispute in connection with shipments could be adjusted without delay.

Again it must be stressed that the long term need is assured markets, this would enable the industry to build up production over a period of years in a gradual planned manner.





Mr. Chairman, Honourable Guests, Gentlemen:

As Vice-President of the Western Canada Petroleum Association, and speaking on behalf of the Association, which represents some 95% of the operators in the province, I wish to express our thanks and appreciation for the opportunity to present for the consideration of the Conference problems which in our opinion vitally affect the petroleum industry. The problems which the Association present here are given for the purpose of eliciting discussion which, it is hoped, will lead to a recommendation to the Ministers for unanimous submission to those authorities having control or jurisdiction. The problems are presented as being of prime importance and a favourable solution of them should facilitate and encourage the development of a healthy and thriving industry, an industry which under such encouragement should assist Canada in achieving a state of independence with reference to petroleum and natural gas reserves. In our opinion, no nation in this modern age without a sufficient supply of petroleum can continue to hold a position as a first-class power.

We submit the following for your consideration:

1. An agreement among the provinces and between them and the Dominion as to a national oil and gas policy to insure that Canada shall develop adequate supplies of petroleum for peacetime and emergency requirements.
2. Standardization of regulations across Canada with such variations as are necessary to fit the particular needs of the respective provinces but containing provisions which will encourage exploration activity by operators both large and small, and which will insure efficient and proper development, and conservation, after discovery.
3. Standardized regulations with principal features fixed and binding not only on the operator but also on governments for the dura-



tion of the reservation and/or lease. i.e., Governmental commitment as to the principal features of the regulations which will not permit retroactive changes or retrospective interpretation.

4. Standardization of regulations across Canada, drawn to promote healthy competition.
5. Determination by the respective provinces of a fair share in any discovery or development to be collected by the province in royalties and/or taxation, with royalties to be fixed and known before discovery or development.
6. Establishment of a sound tax policy re petroleum and natural gas which should recognize peculiar conditions and financial risks inherent in exploration for and development of petroleum.
7. Establishment by the dominion of a long term program for the covering, particularly in the less accessible portions, of Canada by aerial photography, topographic and geologic mapping. Co-ordination between the Dominion and the respective provinces in such a program.
8. Taxation for revenue only. The provinces should abolish and/or avoid use of the tax for expropriation or harassment.
9. Support of the Dominion Government in assisting the petroleum industry to obtain Canada's fair share of equipment and materials during these times of world shortage.
10. Support by the provinces in obtaining an outlet for the surplus heavy crudes now being produced in Saskatchewan and Alberta.
11. Utilization of Alberta's natural gas.





OIL AND GAS INDUSTRY. PROVINCE OF NEW BRUNSWICK

C. T. R. WILSON. N. B. OILFIELDS, LTD.

The New Brunswick Oilfields is the only producer of oil and gas in the Province of New Brunswick. The Shell Exploration New Brunswick Ltd. are now actively engaged in exploration and wildcat drilling in the Province.

Conservation:- We are greatly interested in conservation, but, until the results of Shell's and our own explorations are known both as to volume and type of production it is not possible to formulate regulations. We are maintaining a watching brief on the regulations in other Provinces as a guide for our future requirements.

Taxation:- As a small Independent, the taxation concessions granted in recent years are appreciated. However, we feel very strongly that the dry-hole write off provisions are far more favourable to the major Companies than to the small operator. Since the present tax regulations are expressly designed as an incentive towards increasing production, and since it is improbable that Canada will be self-sufficient as to oil and gas for many years, we feel that the principles of taxation for the Industry should be permanently established. The costs of operations as to geological and geophysical surveys, sub-surface investigations and exploratory drilling should be permanently considered as deductible expenses. The present system of altering or extending the regulations from year to year is not, in our opinion, as a small Independent, conducive to planning long term developments.

RESEARCH COUNCIL OF ALBERTA

87th AVE. & 114th ST.

EDMONTON, ALBERTA.



~~EDMONTON COUNCIL OF ALBERTA  
87th AVE. & 114th ST.  
EDMONTON, ALBERTA.~~

TN26  
I8  
1948

AUTHOR Interprovincial  
Committee on the Mining  
Industry.

TITLE Reports of Steel

21604

LIBRARY  
Energy and Natural Resources

